EDUCATION.

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NATIONAL AID TO EDUCATION.

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THE old masters of the world arrogantly assumed that every Roman citizen was born a ruler; and hence the vainest as well as the greatest of Roman orators said, "Any one can make himself a jurisconsult in a week, but an orator is the production of a lifetime." Aristotle, more thoughtful and observant of the causes and drift of human affairs, said, "All who have meditated on the art of governing mankind have been convinced that the fate of empires depends on the education of children."

The political philosophy of the great Athenian voices the experience of all the ages since his day. It would be easy to fill the time allotted to me with utterances of similar import from publicists and practical statesmen of every period and phase of civil progress.

The conservative forces of government are moral, not physical. It is the intent and spirit of the people which give validity and inviolability to law. Without this it is soulless and impotent. Statutes cannot bring order and prosperity to a state whose citizens are not a law unto themselves. A people who have not an intelligent appreciation of liberty, and do not see the line beyond which it passes into license, will perpetually chafe and rebel against its necessary limitations. They are not safe guardians of civil freedom, if they do not apprehend its nature and the institutions by which it is reduced to a system of practical government.

Individuals who, like children and madmen, have not the capacity or disposition to govern themselves in a way to subserve their own or the public interest, cannot claim the right of self-government. Equally, a state in which a large majority of the people do not comprehend the nature and genius of free institutions, cannot assert the

right of popular government, and has no cause to complain of the restraints of a higher power that would suppress the violence or fraud that tend to the overthrow of law and liberty.

Should the intelligence of the electorate of any State of our Union decline so low as to render self-rule a farce or a peril, unquestionably that article of the Constitution of the general government which guarantees a republican form to every State comes into action, and is paramount to all State authority. The guaranty carries with it an implied power to guard against such a contingency, not necessarily by force, but by demanding or providing in each State the means of popular education.

It is idle longer to talk of this as an exclusive local or State question. It involves the welfare and life of the Union, and is therefore a national question. It is true, "The national charter," as Judge Tourgee has said, "is dumb in regard to it," but it is potentially in it. The conception is as old as the Convention of 1787, and is destined soon to come to its birth in some living form. As the great war powers slumbered in the Constitution till wakened into activity by the necessities of the government, so this will be seen to be a legitimate offspring of fundamental law, when the instinct of self-preservation shall demand it. The Republic carries with it, written or implied, the right to perpetuate itself; and national education being essential to that end, its maintenance will be found necessary to transmute the blind, brutal instincts of ignorant masses into intelligent forces of strength and prosperity.

We have not yet realized the full measure of disaster possible to a free state based upon popular ignorance, but the drama is on the stage, and may yet become a tragedy of blood.

I will not repeat statistics familiar to the public mind, but must recall for your reflection the painful fact that forty-five per cent of illiteracy in sixteen States of the Union has not only placed all political power, in that section of the country, in the hands of a *majority* of the remaining fifty-five per cent of voters, but, not to mention its weight in the electoral college, has given to one twelfth of the voting force of the Republic, seventy-two per cent of power in the lower and eighty-four per cent in the upper branch of Congress. The illiterate balance of power, incapable of understanding or too weak to defend their rights, may be excluded or defrauded at the polls, the constitutional guaranty of State republics defied, and the vast interests of the country subjected to a usurped power of legislation.

But history suggests to our apprehension yet graver perils. This blinded mass of humanity, which to-day may be the convenient instru-

ment of personal avarice or ambition, awakened in the bitter conflicts of party to a consciousness of its strength, held by no moral restraints, and maddened by some real or fancied social wrong, may at length sweep down, with the resistless power of elemental forces, in the States so cursed, all the forms and landmarks of an inherited liberty, or like a Parisian mob, stain its altars with the blood of the purest and ablest of the land. Should such an emergency come to us, as it has to other republics, nothing but national power could arrest the desolation; and the executive, in the discharge of his duty, would be forced to intervene to rescue society from destruction. When we reflect that such possibilities may become an accomplished fact, shall our activity in the cause of popular education be paralyzed by the timid assertion that the work is not national, but one left to the care of the several States? What if the States refuse or neglect to care for this common interest: shall the nation slumber over the restless volcano till it is too late to save our interests, our honor, or our liberties? A people upon whom the responsibilities of the ballot have been cast have a right to demand, of the government which conferred it, a degree of intellectual training which shall enable them safely to discharge its functions.

But we are told we cannot afford to thus secure the future, at the cost of sacrificing the fundamental principle of the local distribution of power. Here we are met again by the ever-recurring, never-ending dogma of State sovereignty, which, without the discrimination of the ghost of Banquo, stalks obtrusively into every subject, seemingly unconscious that it is a ghost. State rights are sacred and impregnable barriers to the usurpations of central power, but are impotent and untimely obstructions in the path of national safety. Will not all State rights perish in the doom that awaits the uuiversal decline of popular intelligence? But will some advocate of local sovereignty tell us how a national supervision of this great department of the common welfare is to imperil State rights more than the regulation of commerce and currency? The exercise of concurrent educational powers in the States is no more dangerous to personal or State rights than the discharge of concurrent judicial functions or the exercise of a concurrent power of taxation. The objection is the spectre of a disordered fancy, and has no real existence. But if it were true, it would be no loss to exchange a paralyzed State function for a national one that would breathe vitality through the whole organism of society. Of what value are rights to a State, if its population cannot discriminate or comprehend them, and have not the ability or spirit to defend them? Abstract political powers are a utopian dream

without the intelligence to recognize and embody them in practical laws and institutions. Political power is a dangerous weapon in the hands of a people who have not the wealth, the arts, the utilities, the industries, the altars, and the homes that spring from the schools.

Not simply our foreign influence and federal unity, but the domestic prosperity and security of the States must fall with the decline of local intelligence. The laws of trade and social economy, the inventive skill, the thrift and enterprise of business, the capacity for industrial production and the accumulations of wealth, the growth of brain power and moral stamina which bring influence and character to communities, have their birth and nourishment in the schools. All these, and the absolute security of States against the encroachments of federal power, will be found in a system of free universal education. The ingenuity and skill of the workshop, the sense and manliness of the farm, the scope and enterprise of commerce, the genius and heroism of arms, the wealth and pathos of literature, — all industries and all professions droop and die in the eclipse of popular intelligence.

The question of congressional aid to education is fundamental, and has been forced into the arena of legislation against the wish of parties, by vexed problems for which statecraft can find no other solution. The situation is abnormal and disgraceful, and demands the forecast of prudent statesmanship rather than the empiricism of politics. Experience teaches us that this great interest cannot longer be left to the exclusive care of the States. The census of 1870 reveals the startling fact that more than one fourth of our whole population above the age of ten years can neither read nor write, and more than one half the population of the late slave States above that age are illiterate.

We do not allude to this in a spirit of crimination, but because it is an essential fact in the discussion. The advantage of the North, and especially of New England, in this regard, has resulted from the circumstances of settlement, and the character of their industries. This difference constitutes no legitimate ground of inaction. We of the North cannot innocently refuse to co-operate in an effort to remedy this great public peril because it is largely local, nor ought we to complain that the funds demanded for its removal, to be effective, will have to be distributed on the basis of illiteracy, and therefore unequally; for while we may not derive as many advantages, we shall be benefited as essentially as the less favored section, and in the only way in which the evil can be reached.

We are one people. Our industrial and political interests are

bound in a perpetual wedlock, and the whole family of States must rise or fall together. We cannot say one to the other, "I have no need of thee," but the members should have the same care one for another, and whether one member suffer, all the members suffer with it, or one member be honored, all the members rejoice with it.

There is an explicit grant of power in the third section of the fourth article of the Constitution, "to dispose of, and make all needful rules and regulations respecting the territory or other property belonging to the United States." Basing its action upon this constitutional provision, Congress, in pursuance of a policy adopted anterior to the organic law, has, at successive periods since the administration of Washington, made grants of land for educational purposes, aggregating 95,737,714 acres. It has also made direct appropriations of money for this purpose, which amount to $47,785,-197.93. In many of these cases, Congress has made, in accordance with the letter of the Constitution, *specific regulations* for the expenditure of the sums appropriated. In view of this record, covering the whole period of our history, it is too late to question the power of the general government to appropriate public funds for educational purposes, and to disburse the same directly by its own agents.

Such appropriations on the basis of illiteracy are not liable to the charge of an unequal distribution of public funds; for they are not given as donations to States or citizens, but for "the common defence and general welfare." Like forts and lighthouses at ports of entry, and military and naval schools, they are not local but general in their purpose and effects. But in what form this national aid can best be applied, is a practical question, demanding the most careful consideration.

The independent *right* of the general government to educate its people for the proper discharge of their public functions is incident to its very existence. But as intelligence is an antecedent condition of self-government, it must be conceded that the right to educate its citizens belongs also to each State; but that right cannot limit the obligation to the States, for the citizens of the States are citizens of the United States, and therefore the general government, whose powers are supreme within their range, is bound to secure to all the children of the Republic, directly or through the States, suitable and sufficient opportunities to prepare them to discharge intelligently and safely their political duties. The public welfare is the supreme law of every state, whether founded upon a written or unwritten constitution; but the attempt to supplant State schools by a national system, or to establish a binary system, would be a measure so

radical and hazardous that it should only be resorted to as a last expedient against the dissolution of the Republic.

On the other hand, the distribution to the States of national funds, to be disbursed by them without supervision or responsibility, would be a failure, as a permanent educational policy. Revenues so received would be lost in the scuffle and antagonisms of politics, or like the old "surplus revenue" of 1836, vanish into thin air through a thousand follies. Should this not happen, it would be diverted into special channels by dominant State prejudices, or be made to minister to the higher education, while popular ignorance, which it is designed to remove, would be left to increase. Colleges and universities will spring as a natural growth from public intelligence, but common schools must be planted and fostered by the government. The most urgent demand of the Republic to-day, looking at its political and social necessities, is a system of free primary instruction that shall reach all classes, races, and sects, and be directed and inspired by a supervision at once intelligent and unflagging. Unfortunately, districts the most benighted and deplorable are the last to realize their situation, and others have not the means to better their condition. National aid should be applied to the localities and populations most in want, and by an impartial intelligence that will make no mistakes. In matters of such moment Congress should be guided by the rules of business which hold between private parties. Let it be sure that the thing paid for will be received. Security is the law of business between honest men, and surely parties who ignore conscience and repudiate solemn obligations have no reason to complain if held to the same rule.

To devise a wise and practical plan of national aid and supervision of instruction should be the work of an intelligent commission, familiar with the wants and conditions of all sections; and even this would have to be perfected by experience, like other permanent institutions. I would not presume to foreshadow a system, in matters so fundamental and organic; but we may venture to suggest that the plan adopted and so successfully administered in the distribution and application of the Peabody Fund would be a safe and instructive precedent for statesmen in the disposition of national funds to the same cause.

I am disposed to believe that whether the proposed aid is to come from an invested fund or from annual appropriations, it should be paid directly to districts by educated and responsible agents appointed by the executive, and on such conditions as to improve and lengthen schools already existing, and to secure the establishment

of others in localities where they are needed. These school agents should act in harmony with local officials, as far as possible, but be independent of State control, and required to examine by visitation, and report in detail, the condition and wants of their respective districts to the Commissioner of Education.

Such beneficent supervision by the government, if judiciously conducted, would be felt to be beneficial to all interests, and would serve to draw the fellowship of the States into a closer union by invisible ties of gratitude and love. Or, if in any case prejudice, pride, or some fancied right should refuse to submit to an inspection designed to increase and perpetuate the blessings of liberty, it would furnish to the government an opportunity to assert its paramount sovereignty in a case that would command the approval of mankind, — which might be an incident little to be feared or regretted. It is best that the lines of power should be sharply drawn, and questions of jurisdiction set at rest by the court.

We do not insist on mixed schools, nor attempt to lay down the *specific* conditions on which public moneys shall be distributed for educational purposes ; but we insist that it should be in accordance with the constitutional provision, that "No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States."

I am not unaware that this scheme of national intervention in the educational interests of the country has been opposed, on the plea that we cannot show any express power delegated to Congress to establish a system of schools in the States, and that consequently the power is reserved to and belongs only to the States. Our answer is, that the objection is irrelevant, for we are not asking for the overthrow of State systems, or the establishment of a national system. We are simply asking that Congress may go into the States and direct the expenditure of funds, which, it is admitted, she has a right to appropriate for such purposes. When government appropriates public moneys, they should be disbursed by agents responsible to itself ; but if States have exclusive control of education, funds given for its advancement may be so diverted as to defeat the end in view. It has been done and may be done again without remedy.

But the right of such *supervision* is denied, on the allegation that it is not in the bond. I admit it is not in the letter ; but I claim that it is the intrinsic life of the bond, without which it could not exist. If we are to deny to Congress all powers incidental to those expressed in the Constitution, we must abolish the departments of Agriculture and the Coast Survey, so essential to two of the great

industries of the country, shut up our naval and military academies, and fold our arms in war and rebellion, and go to pieces for want of the constitutional power of self-defence. Nay, one third of the legislation of Congress is void, and the very charter of our liberties becomes a Procrustean bed upon which the Republic is bound, and beyond which it can never hope to reach in all the progress of the ages.

We are told that "Federal education was not contemplated as necessary to establish justice, to insure domestic tranquillity, provide for the common defence, promote the general welfare, and secure the blessings of liberty to the people." Such language in our country and at our time is marvellous. Without popular education popular governments have no right of existence, and cannot be maintained when established. The Republic has as legitimate a right to protect itself against ignorance as against pestilence and rebellion.

Education informs and quickens the inventive powers, by which improved methods and new forces are given to productive industry; it lifts the poor from the ranks of dependent labor into the fields of enterprise and responsibility, and surrounds them with the utilities and beauties of life; it opens to the intellect the realms of thought, and leads it through the galleries of art and science; it gives to the nation wealth for poverty, strength for weakness, and primacy for subordination: but not for one or all of these does the Republic open its treasury for the advance of knowledge. It is solely as an act of self-defence that the government comes to the rescue of the schools. For this, if the proceeds of the sale of the public lands are insufficient, it has the right to pour out millions, and dictate and control the method and the direction of their disbursement.

In this connection, we should remember that the strongest defences of nations are not armies and navies, but the affections and patriotism of their citizens. A common pride in the achievements, and a common faith in the character and destiny of the government are essential to its peace and perpetuity. Discordant creeds are the precursors of faction and dissolution. The schools are the nurseries of public sentiment, and should have but one curriculum of political philosophy and civil history.

The past is admonitory of the future. To remove a cancer and leave its roots is not cure, but relief. The fatal hour is only delayed. In war he conquers whose principle survives the conflict of arms.

If history is reversed, if treason and patriotism are transformed, if opposite theories of government are inculcated, and pride and shame interchanged in our sources of national thought, are we acting the

part of a prudent regard for the welfare of posterity? Are we not holding a chalice of blood to the lips of our children, and is it playing the rôle of statesmen for our public men to shut their eyes and ignore such facts? Has our government no power to enforce, I do not say a uniformity of text-books, but the inculcation of a common national sentiment and political philosophy in the schools?

I realize how difficult and delicate is the subject of which I speak; but it is legitimate to the occasion, and it would be cowardly to blink it out of sight. I cherish no feeling of sectionalism, and would utter no word of crimination; but I am sure it is not wisdom to allow great dangers to drift in silence into irretrievable ruin, where there is no real ground of difference of theory or action, but only pride and prejudice.

The irreconcilable antagonism between free and slave labor, from whence sprang the divergent theories and sectional bitterness of our old-time politics, having perished with the war, there is nothing left but habits of thought and wounded pride to withhold us from mutual regard and a cordial co-operation in all that can advance the prosperity and glory of the country.

Neither can deny to the other honesty of convictions or courage in battle, and this rescues the dead of both sections from dishonor. Why contend longer over obstructions and dead issues? Credit and trade, labor and skill, civil power and the social amenities, are all paralyzed by this persistent rancor of sectional jealousy, surviving its causes for a score of years. Our respective industries would be strengthened and made lucrative by mutual confidence and the fraternal emulations of business. Property would appreciate and resources develop, science be quickened and literature enriched, private virtue become more sacred and social happiness more universal, if we should give less time to the differentia of politics and more to the essentials of life. So long as opposing theories as to the nature and later history of the government shall be taught in the different States, so long there will be bitterness and vituperation in the press, angry debates and disgraceful scenes in Congress, and portents of more direful disasters in the future.

But the cure must come from without. The Ethiopian cannot change his skin, nor an insane man reverse his thoughts. If reason and self-interest have lost their control in the States, there must be a supreme power that holds and moves them in their orbits, if we are a nation, that can reach and remove the causes of discontent and peril.

The census reveals the fact that a large per cent of the illiterates

of the country are of foreign birth. Emigration has become the policy of European states, as a relief to their institutions from the strain beneath. Our country has been made the field into which the ignorance, poverty, and hate of these revolutionary masses have been poured. Like pent-up gases, they become harmless, for the most part, when the pressure is removed; but, crippled in capacity, and with nothing to tax, they crowd under the protection of federal law into the States, and fill their school-houses with children. It is but right, therefore, that the enhanced burdens thus thrown upon the property of the States, if they do their duty to the children, and which in the aggregate amount to millions, should be relieved by national aid. There must be a rapid and constant decline in the intelligence, capacity, and character of our population, if these teeming millions are left uneducated and unassimilated. We do not often stop to consider what changes have taken place since our gates were thrown open to the world.

The influx of the overcrowded peoples East and West, by the modern facilities of transportation, could not be anticipated a century ago. This change necessitates corresponding changes in our internal policy. The schools must be multiplied and improved in methods and force, so as to keep pace with this drifting multitude, whose numbers outrun their means.

The failure to assimilate these millions, and bring them into full sympathy with our institutions and habits of thought, is already felt, especially in those great centres into which they have crowded in the largest numbers.

It is not immigration or change we deprecate, but deterioration. The successive invasions of England were terrible visitations, but they poured fresh vigor and broader sentiments into the old Britain, from whose mixed blood has sprung the brawny, liberty-loving Englishman of history. With them there was a constant growth through their ages of battle. But our pauper immigrants are not Saxon or Norman invaders, and we fear a constant decline through our ages of trade.

The children of these strangers within our gates must be made American in thrift and skill, and in their political aspirations and pride; they must be lifted by knowledge above the control of party passion, and be inspired with a personality that will not suffer them to be the tools of personal ambition; they must be made to apprehend the nature and genius of our institutions, and to love the flag of the Republic as the symbol of freedom and power. Does the past justify us in the belief that the *States* will do all this?

The age is characterized by broader views and quickened efforts in the cause of popular education. Governments have at last been forced to adopt it as the policy of success. Its power has been discovered in the productive force imparted to industry, in the triumphs of science and the achievements of war. Discoveries and inventions are the footsteps of its progress; it is recognized in the gift of the ballot and the subordination of leaders to the popular will; it is heard, not in the drum-roll, but in the music of machinery; its growth is realized in the widened uses of literature and the utilities of art; lightning and steam are the contestants in its Olympiads, and it gathers its battle-flags at Sedan.

While the statesmanship of Europe is pouring out millions in the rivalry of her systems of schools, shall we stand still to be swamped in the surf that rolls from her shores?

To-day, we are hardly abreast with England, France, and Russia in the character and resources of our schools. And shall we be told that the government must fold its arms with the shallow pretence of a want of power, and leave this work exclusively to the States, which cannot realize or feel the responsibility of this magnificent competition of empires in the march of knowledge and the growth of mental power? The policy will be a cowardly and suicidal acknowledgment of impotency, and if persisted in, we shall learn to our sorrow that an ignorant people is an inferior people in all the elements of national greatness.

If the bill now pending before Congress is too narrow for either aid or incitement, let its gifts be enlarged to the measure of our wants. The nation is not impoverished when it gives to itself. Revenues so bestowed will be a profitable investment. It is but casting bread upon the waters that will be found after many days. We should be glad to help build the waste places made desolate by war, if only hereafter they may be allowed to blossom with the fruits of an intelligent industry and social peace. The day is not distant, I trust, when both the North and the South will learn that the rivalries of labor and trade, and the emulations of literature and science, are more profitable than the squabbles of politics, or the feeding of old fires that ought to be dead. Let us unite in the noble enterprise of making our country foremost in the march of intelligence, foremost in the dignity of power, and foremost in the purity of its civilization.

The national domain is the common property of the Republic, and should be used to promote the general welfare. We can conceive of no employment of the proceeds of its sale of more general and lasting utility, and none more honorable to a free, Christian people, than

its application to the building up of a permanent system of free schools, that shall be adequate to supply the demands of the future. This is an essential condition of national stability and prosperity. No subject of legislation more urgently demands a liberal appropriation than this. It will be an irreparable misfortune if, in a scheme so grand in its nature and so far-reaching in its influence, we come to a dead-lock over the puerile conceit that any material or moral interest can suffer from a concurrent but carefully defined advisory control of popular education by the general government. In this the interests of the State and the nation are one, and co-operation may bring them more closely together. Nothing is demanded which can limit or subvert any valuable prerogative of State power. Enlarged intelligence imparts a clearer apprehension of rights, and an enhanced power to defend them. Armies and navies are defences against foreign aggression; but school-houses are the natural and effective security of governments against the domestic faction and violence that are engendered in the homes of ignorance. The people are the sovereigns and citizens of both the State and the nation, and can claim the right to be fitted for their political functions from both. When the first is unable to discharge its trust, the latter should come to its aid in a peaceful co-operation. But when a State wilfully neglects to provide the means of knowledge for the poorest and humblest of its children, the supreme power of the nation possesses, beyond a reasonable doubt, the right to intervene in the interest of nationa-intelligence, and provide, in such way and by such agents as Congress may judge best, for the education of the children of its neglected citizens.

But we will not dwell upon this, for the question to-day before the American people is rather one of patriotism than one of right. The call is not to the defence of a prerogative, but to the discharge of an imperative duty. National inferiority and ultimate anarchy or despotism are the inevitable fruits of popular ignorance, that cannot discern the real interests or the conditions of safety and prosperity to the country. School-houses have done more for the German empire than military academies for France, or great universities for England.

Industrial success, military power, political superiority, intellectual achievements, and national character, all have their springs in high popular intelligence. Our destiny as a republic and our place in the march of civilization are involved in the maintenance or failure of a system of free, universal education.

EDUCATIONAL PRINCIPLES OF THE KINDERGARTEN.

BY MISS E. SHIRREFF,

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THE growing popularity of the kindergarten makes it all the more necessary to establish what is the real position of this form of infant training in relation to education generally; since it too commonly happens that the practical method is adopted and valued for this o· that superficial advantage, while the principles on which it is grounded are left out of sight. The kindergarten is taken as a complete thing, but it is only a portion of a far wider thing. It is taken as a method of teaching and amusing little children, while Froebel thought only of educating them, caring little for the amount they were taught, and knowing that they would teach and amuse themselves in one way or another, independently of any efforts of ours. Why then meddle with them? it may be said. Because if their play, or the instruction they are gaining hourly from the world around them, is to be made educationally useful, it must be purposely directed to that end. The child will, indeed must, use his mental and moral faculties, as well as his limbs, but he will use them at random; and education requires a settled and far-reaching purpose, and means adapted to attain it. We learn from children themselves how they learn; what nature bids them learn; as also, what are the uses of their play and what makes it delightful: but it is from a wider study of human nature, and of the world in which man is placed, that we learn the ultimate purposes to which these growing capabilities and activities must be directed, to make a happy childhood lead to a happy, active youth, to a useful and noble manhood.

Froebel's main principle was that education must be according to nature; can only help the growth and development of the natural power and qualities of mind and body. All systems that seek to impose a new nature, as it were, upon the child, to cultivate one set of faculties to the neglect of others, to impose knowledge of a certain kind, instead of aiding the newly awakened intelligence to seek the knowledge which is congenial to it, — all such systems are false, and whatever they may teach, can never rightly educate. "In our care of plants," Froebel says, "or of any young animals, we place them in fitting surroundings, and let them live and grow according to their nature; but with the child we deal as with a lump of clay, that may be moulded in our hands." In other words,

we thwart instead of following nature; we refuse to learn from her, and attempt to impose our theories upon her method of development. This is our great error, and the failures in education are our punishment.

Froebel was not the first reformer who held up nature as the guide to be followed; but none like him had studied nature in all organic growths, and in the first manifestations of human life. Pestalozzi lacked knowledge; Rousseau lacked common-sense and knowledge both, and while talking loudly of nature, laid down that the human creature, so eminently social by nature, should be brought up in isolation. Froebel studied human nature, not in the works of metaphysicians only, but beside the infant's cradle and in the world's history. He was not content with psychology as it deals with the fully developed man, nor with man as the individual only, apart from time and circumstance: he searched the growth of the individual from the earliest germs of conscious life, and the growth of the race as showing forth what have been the successive steps of human development; for he held the theory that the development of the individual is parallel to that of the race. To investigate this theory does not concern us here; but so far is evident to all, and stands forth clearly in condemnation of ordinary school systems, that the outer world, not the world of thought and abstract knowledge, is what earliest stirs the faculty of observation and the spirit of inquiry, and that these being roused, the active exercise of mental and bodily faculties follows without any interference or compulsion by others, the teacher being needed only to direct and preserve from error.

Another important principle follows from the primary one of taking nature as our guide; *i. e.*, that the bodily must be cultivated simultaneously with the mental powers; that they are part of one whole, and each is mutilated by neglect of the other. Action is the larger part of life, and through action the will is disciplined and strengthened. What the man is, what he can do, whether in the field of practical life, scientific work, or imaginative creation, is what makes him a valuable member of society, not the mere amount of knowledge he acquired at school. Any amount of information a child is capable of acquiring is only of value so far as it has, in the process of acquisition, drawn out and exercised the various faculties that lead to the search for further knowledge or to the rational conduct of life, and well-directed energy in doing the work set before him, be it manual or intellectual. Neither, on Froebel's system, can religious or moral training be separated from the rest. Exercise of the active faculties fosters self-development and energy of will; and

conscience, gradually awakened, bends the will to the sense of duty. Here lies the foundation of all moral strength, which, with the help of the natural instinct of reverence, becomes religion before the child can understand a single dogma of theology.

Through long years of practical work did Froebel strive to apply his principles, first as a teacher in public institutions, and then in schools founded by himself, till one failure after another made him realize the fact that all such labor was mere building on sand, unless a sound foundation could be laid through infant training; and this work must precede that of the schoolmaster, or his result remains one-sided and imperfect. There was no time, he found, to begin education upon natural, and therefore rational principles, when the necessities of instruction weighed heavily upon both teacher and pupil. Nothing could give effectual help but making use of the too generally wasted years of early childhood, of the first vigorous growth of every human capacity, to prepare the way for the after growth in true and harmonious proportion. Then it was, as this conviction grew stronger and stronger on his mind, that he instituted the kindergarten, and rejoiced over its success, not as a means of keeping baby-pupils amused or giving them scraps of information, but as laying a systematic foundation for all after-education, — putting the human creature in possession, so to speak, of the powers nature has given, but which she leaves to be directed by human care for good or ill; the powers whereby man grows to his full stature, becomes lord over himself and over the blind forces around him, which master or minister to him according to his knowledge and his educated, steadfast will. Froebel saw God's law in everything, and this made every manifestation of nature holy to him. Thus in making education intensely human, he strove to raise men nearer to the Divine.

It was then, to assist in laying the ground-plan for so vast a task as education, thus conceived, presents to us, that those kindergarten games and occupations were invented, which, in ignorant hands, become trivial and mechanical. No wonder that, so used, they have done so little for true human culture. The fault is, first, with the advocates of the system, who have been too often content with practical manuals; secondly, with the professed kindergarten teachers, who have found it easier to fall in with the popular view than to raise it, and have themselves been too often mechanically trained; and lastly, it belongs to the general ignorance of education as a science, which has hindered parents from knowing what to look for from this new system, and prevented even professed teachers in schools and universities from seeing how all culture, all the development they

seek to produce, has its root in such infant training. Without some knowledge of education as founded on mental and physiological science, — in other words, the science of human nature, — none can apprehend the full scope and meaning of Froebel's system. Mental science covers a large field, but it is only a small portion of that vast field that the student of education in its early period is bound to master; just as it is only an elementary knowledge of physiology that is absolutely necessary to guide early physical training. At no period of growth is it safe to consider the physical or the mental nature exclusively, to forget the incessant action and reaction going on between them and continually bearing witness, for our warning and instruction, that the organism we have to deal with is *one*, through all the variety of its manifestations. Wise old Montaigne said it three centuries ago: "It is not a body only or a mind only we have to fashion; it is a man, and we must not divide him into two." At the kindergarten period of childhood, it is above all essential to bear this in mind; and the games and occupations are directed towards the harmonious unfolding, in their natural sequences, of *all* the child's powers. Hence it is necessary that those who direct them, or those who would fairly judge them, should have that degree of knowledge of the conditions of physical and mental welfare which can be gained only through some study of physiology and of mental science.

The most prominent points towards which kindergarten training is directed are: the healthy exercise of the limbs; the exercise, by delicate and accurate manipulation, of the hand, as the instrument of all human labor; the cultivation of the senses of sight, touch, and hearing, through which impressions are conveyed to the brain with more or less of accuracy, according as they are so cultivated; the careful guidance of the faculty of observation, which the child naturally uses incessantly from the dawn of conscious life, but uses imperfectly and inaccurately through life if left without judicious discipline; the intelligent use by the teacher of the all-subduing power of habit, whereby these early activities of mind and body in the child are set in the right groove, in the direction which shall facilitate systematic progress towards the end the educator keeps steadily in view; constant appeal to the no less powerful aid of association in forming habits of action and thought and feeling; and through all and with all, constant watching of the child's own natural desires and growth, in order so to mete out work and play that they shall just stimulate the instinctive tendency to mental and bodily activity, without straining or overmastering it. Every germ of the higher life — imagination, the sense of beauty, and above all, rever-

ence—is also carefully looked for and tended; for it is through these the child learns, first, obedience to what is higher than himself, as the most clearly intelligible duty of the helpless and ignorant, then love of God through love of earthly parents, joy in all creation, and finally the sense of duty, as the moral sense awakens and conscious moral life begins in earnest.

Such are the leading principles of Froebel's method of infant training, which carries us far enough from the play-teaching to keep little children quiet and amused which is the popular view of the kindergarten. Instruction held quite a secondary place with Froebel; at the same time it would be doing injustice to the kindergarten to overlook what it does teach, which is certainly not less than, though different from, what is ordinarily taught. It takes for granted the child's wish to learn, for this is no less natural than the wish for bodily activity, though deadened by commonplace instruction. The kindergarten method stimulates it by substituting objects for symbols; instruction through the senses for abstractions and painful efforts of memory to remember what is not understood. No step is made in kindergarten teaching without clear understanding; and only from what is distinctly understood and known is the pupil led on to what is new and unknown. In this manner all the earlier portions of arithmetic, including simple fractions, are learned, not only without undue effort, but with actual enjoyment, and the after-school work by rules made comparatively easy. It is the same with regard to form as to number: geometrical figures, accurately and familiarly known, bring to view so many of the relations of lines and angles, that the theoretical geometry of later years is freed from a large amount of the difficulty it presents to young minds. The reasons why subjects connected with number and form are made prominent in kindergarten instruction are: first, the facility they offer for concrete treatment; and secondly, that they provide the simplest introduction to accurate reasoning. Through no other teaching, possible for young children, can they be so easily led to perceive that if A and B are so and so, then C must be so and so, thus making a first step towards drawing a conclusion accurately from an established premise; a process which ordinary educators seem too often to forget is quite as essential in the daily conduct of life as in the most abstruse forms of mental labor.

One of the most important branches of kindergarten instruction is natural history, joined to the most elementary notions of physics. There is, however, little teaching in the ordinary sense; no burden is imposed on the memory, but children are led on to learn of their

own accord. Mental activity being, no less than physical activity, a natural instinct in the human creature, we may trust to the child's desire to know, if only we present to him the objects fitted to exercise his curiosity; and nothing rouses this more effectually, because naturally, than the observation of animals and plants, the changes in outward phenomena which are always before us, — the sky, the clouds, sunshine and rain, day and night. The care of pet animals, and their comparison with others only known from pictures; a garden in which each child can work, — these are the means by which mind and body are cultivated together: while the teacher's care must be, that what is so learned is learned accurately, both as regards the exercise of observation and comparison, and of memory in retaining the correct names of what has been taught. Children, as I have already said, are always learning; their observing faculty is continually on the alert: but accuracy of perception, clearness of discrimination, certainty as regards what has or has not been actually seen or understood, — these are the fruits of education, and the sooner the seeds are sown, the surer the harvest. It need hardly be pointed out how much ordinary education, at a much later age than we are now considering, fails in this respect; nor how much loose thought, wavering action, and slovenly work are due to the want of those mental habits, which in the kindergarten are trained from the earliest budding of intellectual faculty.

Another remarkable characteristic of Froebel's method, to which I have already drawn attention, is the careful exercise of the limbs and senses, and this as an integral and most important part of education, not only as training physical capacities, but as leading to the active exercise of the imaginative and creative faculty in the child. Man, said Froebel, should be able to give outer expression and form to the thought within. We should *do*, act, and work, as well as think; and one of the strongest reproaches he cast upon all modern education was that it cultivated only the receptive faculties, and neglected the active and creative; thus leaving the child without help towards becoming a good worker or a good artist, neither drawing out originality or practical industry. The kindergarten exercises are designed to stimulate love of work, the desire to give expression to individual fancy; and to give the free use of the primary instruments of all work.

Froebel never separates the physical from the mental training. The occupations that cultivate accuracy of eye, sureness and delicacy of hand, — such, for instance, as the paper-plaiting, stick-laying, drawing, and moulding, — all carry on the same exercise of observation,

require the same accuracy of perception and comprehension, as in learning the elements of arithmetic and geometry; just as the latter require also a correct eye and a careful manipulation. In the same manner, the freer bodily exercises, games, etc., being all joined with music and singing, train accuracy in another form, by the precision required in combined movements performed to music. The children's minds are evidently all awake to watch and imitate what is done before them.

The songs which accompany the games also exercise the memory pleasantly, while cultivating the ear; and the facts of daily life or of natural history they turn upon, and which have already become familiar through other means, are thus recalled and stamped on the mind by the associations of pleasure in the lively play. That the children enjoy themselves, no one denies; but while the children play, the teacher pursues the serious purpose towards which the play, no less than the work, is made to conduce. Once more, it is only when that purpose is forgotten that the kindergarten becomes mechanical, and a mere trivial device for keeping children contented and out of mischief till their real education can begin. Then the songs and games sink to meaningless play, good only in so far as they are merry and healthy; the *gifts*, whether of balls or cubes, are no more than the common boxes of bricks with which a child amuses himself on the floor, or perhaps learns a little arithmetic at lesson-time. The drawing, mechanically treated, loses all its educational value, and seems, with its constant repetition of straight lines, a less promising introduction to art than tracing over a transparent slate; while hemming may be regarded as a profitable substitute for paper-plaiting or stick-laying, if the lessons of symmetry, the exercise of invention, the union of mental discipline with handicraft, which give life and meaning to kindergarten work, are left out. Lastly, the common school hymns learned by rote, the religious form, never more than a form to little children, may seem as good as kindergarten religious instruction, if the latter be equally mechanical; though if given in the spirit of its founder, it is the gradual leading of the child to feel that he lives and moves and has his being in the presence and love of God, of whom bird, beast, and flower, the sun and stars, the home love and the teacher's care and wisdom, all speak to him in turn.

If the teacher be really wise and careful, then is the class soon in very truth the garden where children grow and expand as nature directs, all hindrances cleared away and all help given to make the

growth healthy and equal in all its parts. If she lacks those qualities, then the system fails in her hands; but instead of undervaluing the system, we should only deplore that here also — as, alas! too often elsewhere — the holy work of education is trusted to the half-educated.

THE COLLEGIATE EDUCATION OF GIRLS.*

PROFESSOR MARIA MITCHELL, VASSAR COLLEGE.

SOME years since, I met, in travelling, an intelligent gentleman who was interested in the cause of education. It is good to get away from your native latitude, even if the pole star is lower. I listened with great interest to the expression of his views, which were based upon surroundings unlike my own. He enlarged upon the advantage to the country which would result from a great national university, and he described it in glowing colors. "I would have it cost," he said, "not tens of millions, but hundreds of millions." "For both boys and girls," I said quietly. He paused a minute, and then said, as if to himself, "Well, — I had not thought of the girls." And he had daughters only! Let us think of the girls.

WHOM SHALL WE HELP TO A COLLEGIATE EDUCATION?

Our colleges are, at present, adapted to what in England would be called the "upper middle class." Can we extend their opportunities to a larger number? We cannot put *every* girl through a college course. In the more enlightened States, elementary education is compulsory, and (theoretically) every child is taught to read and to write. To watch the public schools; to foster interest in the subject of education; to vote for the best persons, men or women, as guardians of these schools,— these are our duties to *all* classes, but more especially to the *very* poor, to whom no other schools can open. We cannot in this age make the public school a college, although it would be well if every State, like Massachusetts, gave to the few who intend to enter college the necessary instruction in preparatory studies. To my question, "*Whom shall we help to collegiate education?*" I should answer: —

First. Do not attempt to put the daughters of the *very* poor through a college course. It is barely possible that a rare genius may be found even among the unworthy poor, but the chance is so small that we shall waste time in looking for it. We cannot hurry the processes of nature. We may by rearrangements and modifications change the conditions into which we are born, but we cannot escape them. The tree of slowest growth is the *family* tree: if you examine that on one of whose branches some great name hangs, you will find that it had no mushroom growth, that its rings can be counted by hundreds.

* This paper was read at the Congress of the Association for the Advancement of Women, held in Boston, October, 1880.

Second. I should say, also, Do not aid the sickly girl to enter college. Harm has already been done in this way. As in earlier days the feeble boy was trained for the pulpit, so there is to-day some tendency to send a sickly girl to college, — partly because our girls' colleges are governed by so good sanitary laws. I should dissuade the delicate girl from the attempt to take a regular college course. Let her study in the open air! Let her take a regular course of study in out-of-door practical sciences,— botany, geology, mineralogy. Let her exchange the crochet-needle for the needle of the surveyor's compass. The study of nature must be study with nature; if it requires one hour with books, this may be followed by two hours spent in hunting an insect in green fields, or in gathering shells from sea-washed rocks.

I should suppose that a summer science school for girls would be a good institution. Let a number of students club together, and establishing themselves in a healthy and unfashionable place, study its natural history. Such education would be fragmentary, but a little of science is as valuable for development as a little of the classics, or a little of mathematics; and the theory of to-day is, "Taste, even if you cannot drink deeply."

Knowing well-born, well-bred and healthy young girls who are prepared to enter college, and whose means are not quite adequate, let us help *them*. But the hand should not go to the pocket without some direction from the head. I say let us help *them*, for I deplore the rash impulse to take up one bright girl and carry her through a college course, by other means than those of her parents or relatives. We take her from the very struggle which she needs for her growth. She learns to expect to be held up, and she ceases to stand upright. I believe a girl loses her nicety in morals who looks around to see who is coming to her rescue! She owes, without a thought of payment.

Do not aid by founding prizes. You then add an artificial struggle to that which is healthy and invigorating. If possible, aid by giving manual labor, but let it be such as shall be educating. When we talk of manual labor for girls, we seem always to mean household duties. A college student can often make herself useful by copying for professors, or by tutoring slow pupils, as well as by less pleasing domestic work. I think young girls at colleges where land is allotted to them for cultivation might raise and sell flowers and seeds. Form, for any young girl, a habit of earning money, and you give her a lifelong advantage. I consider it one of my duties to the young women who come into my department to encourage a respect for remunerative occupation. Why should girls be brought up with an idea that *paid* labor is *ignoble?*

If you cannot give to a good girl a chance to work her way through college, give money into her hands. Do not help her by buying her books, by paying her bills, or by bestowing unsuitable costume. Let her learn the value of money. Most girls would prefer a loan, and the very carefulness to repay a loan would be a check to unnecessary expense. But as some very sensible girls are timid about a loan, I should say, "Give," but give just the amount sufficient to bridge over the difficult place; do not make the journey ruinously easy. Our Vassar girls receive aid from a fund left by the founder of the college. Many of them return it as soon as they are able, for the use of the coming classes. It is small, and but few can receive it in one year. I would increase the number who can receive, rather than the amount to each student.

This direct aid given to certain students by individuals is good, but it is limited to exceptional cases. We reverse the order of nature. We are careful of the single life, we are careless of the type.

HOW SHALL WE MAKE THE HIGHER EDUCATION OF WOMEN STILL HIGHER?

I never look at a group of teachers such as are employed in the colleges for girls but I am reminded of the expression of St. Ambrose, "the noble army of martyrs." The work of a teacher should be such as does not kill, for the value of human life is quite as great in the case of the teacher as in that of the student.

The pleasant smile with which a young teacher greets her class as she enters upon her duties should become more serene, more inspiring at middle life. But how can it be? I find that the number of students to one teacher is usually fifty! The amount of work that teachers do is enormous. There seems to be no "getting through." They work five or six hours a day and then take to their rooms the written examinations and problems for their evening recreation. Besides, a good teacher does infinitely higher work outside of tutorial hours. I have sometimes looked at the variety of work done for some young girl, — the careful watching over her health, the good counsel given in morals, the patient endurance with loose mental habits, — and I have said to myself, "How little that parent knows the enormous return which he gets for his moneyed investment!"

We are constantly told that too many women become teachers. Yes; but the number would not be too great if fewer students were put into the hands of one teacher. A teacher should not cease to be a student; she cannot, with safety; she should have time for new acquisitions. I would not say, give time by lengthening vacations,

but I would say, give time by lessening the number of students. A young girl needs the companionship in her classes of a few, but the teacher should know each pupil individually. According to my own idea, the proper number for good class work is ten; but when I asked a professor of Cornell how many he thought best for class and professor, he said, "Four." Given a small class and a teacher of any magnetism, and there need be no required attendance.

A large class requires much routine work to enable it to move without friction, and to some persons the precision of military drill is the poetry of motion. I mourn over any loss of individuality.

We should increase the number of teachers by lessening the number of students to each, and diminish the number by retiring the old and worn-out. In New York State a judge is retired at seventy, but a professor in a college may have a life tenure. The retired teacher should be pensioned. It is a great wrong to students to retain the incompetent teacher who would gladly rest; it is base and cruel to turn off the old teacher penniless. I have known a woman whom every one respected and whose pupils loved her, to retire, after forty years of labor in one school, without even the small purse and small speech usually proffered to the cast-off clergyman. And this in Massachusetts.

Our colleges are too expensive for the class which most needs them. We ought to reach the large middle class. We do not. From the great city of New York there are usually ten students in Vassar College; and as many from New York are at Vassar as at any other college. If we take out of New York life those for whom Europe is the college, those for whom the workshop is the university, those for whom society is the universe, we still have an enormous residuum of young women who should be studying. For these our colleges are too expensive. The cost of a girl's education is much greater than that of a boy. Why should it be so? Why should not girls club together, board themselves in a wholesome and inexpensive way, obtain some light employment which will add to their means, and dress for almost nothing? I touch the subject of expense in dress with a sinking heart, for I know that no party is with me; I stand almost alone. We need organized missionary work on the subject. Young women say, "It is our duty to look pretty"; and one would suppose, from the attention paid to it, that it was the *highest* duty. In the very homes whose walls are unadorned with pictures and whose book-shelves contain no standard works, the wardrobe is defended on æsthetic grounds. I have visited in the houses of English noblemen whose daughters would be shocked at the expensiveness of the college and

school costumes of the daughters of our ordinary mechanics. This is a question of *taste* only. But what shall we say of that family in which the personal decoration continues to be costly after financial reverse has come to its head?

I hope the time will come when colleges will be able to give up the pomps and parades of public days. Why should the conferring of degrees at commencement be heralded by noisy music? Is the college commencement a *necessary* evil? Girls need no stimulus to work. The commencement ceremonies are in the thoughts of an ambitious girl from the time she enters college until she graduates. The "part" at commencement haunts her; the college degree, she feels, is sure, but for the sake of the loved ones at home, she hopes and works and prays for what she considers the "honor." Is it a healthy influence?

There can be no other motive for great gatherings at colleges than that of indirect advertising. The guests who come to the college see nothing of its methods of working; they see the college building and its inmates in full dress; they know nothing of the unremitting, hard, conscientious study which is done behind the scenes.

When we have done all that we can to lessen the expense inside the walls of the college, — when those of us who have longed for college education, and to whom it has been denied for want of means, contribute our small aids, — but little has been down toward bringing the colleges within the reach of the large middle class which needs them.

What our colleges need is *endowment*. But I would not have it take the shape of buildings. Buildings should come as they are called for, and be adapted to the call. Our colleges should not be monuments to the dead, but workshops for the living. There is no beauty in unfitness. There stands on Carlton Hill, in Edinburgh, a temple which would delight the heart of an old Greek by its architectural beauty. It is the astronomical observatory, and every classic ornament hides the height of the stars from the observer.

Thirty years ago I heard Professor Henry say that what he had needed was a simple office, and the government had put him into the Smithsonian Institution. There is a story of a distinguished chemist, who, when a visitor asked to be shown his laboratory, turned to the servant and said, "John, bring in the laboratory," and it was brought in on a waiter. I know two buildings for educational purposes, which are exactly adapted to the demand of the hour. Both were built by women. The first is the woman's laboratory in Boston, where every cent has been spent for science and the investigations of science.

The second is the building of the School of Philosophy at Concord. It is a plain one-story building; its outward decoration the vine which creeps up its unpainted sides; its only music the song of birds. It shelters the summer philosophers; its lookout from the numerous windows is inspiring, its ventilation is excellent.

What our colleges need is such endowment as shall bring them within the reach of the large middle class. The amount of money given to girls' colleges is pitiably small. The endowment of all the girls' colleges put together does not come up to that of Harvard alone. Why are *not* our colleges endowed? Because our people do not quite believe in that kind of education for boys: in the case of girls there is positive disbelief; the tone of the press is against it.

A New York editor once said to me, "The highest duty of a woman is to be ornamental in the parlor." He forgot that the majority of women have no parlors. I take up at random newspaper scraps, and I read: —

"Last year twelve persons in the United States gave an aggregate of $3,000,000 to foreign missions."

"Mr. S—— gives $25,000 for charitable, benevolent, and educational purposes in this country."

These scraps do not unfairly represent the ratio of interest felt for foreign missions and home schools; very rarely is anything given directly for the education of girls. It would be well if something of the missionary's spirit and the revivalist's zeal came into our staid and decorous methods of dealing with educational subjects. To my view, the admission of women to school suffrage in Massachusetts is a very great gain to the cause of education. Perhaps it is larger to me because I am far off, thus inverting the law of optics; for I hear it spoken of as *small gain* in Massachusetts. But it is eventu ally the gain of all that we ask for women; it is the beginning, and the best beginning. All that women ask for is the enlightenment of our present rulers; the foreign-born boy takes a lesson indirectly from the women who as school committee visit the school. Massachusetts was better prepared for school suffrage than New York can be for a long time. The women's clubs had led the way. The community had become accustomed to hearing from women, had learned to value the opinions of women; the suffrage movement had reached the ears of women; the temperance movement had gone to their hearts; women had already become the leading orators: it was comparatively a little thing to drop a ballot into a box. When all the women of the land are roused to an interest in the public schools, the "hundreds of millions" for women's colleges, or for men's colleges, or for both together, will not be wanting.

THE MUTUAL ADJUSTMENT OF SECONDARY, COLLEGIATE, AND PROFESSIONAL EDUCATION, AS REGARDS GRAPHIC SCIENCE.

BY S. EDWARD WARREN, C. E.

I WISH to write a short and practical article on this subject.

To make it short, the principle of division of labor must be applied so that the subject shall be narrowly limited and specific; leaving to other times or persons the general questions of industrial education, and of the comparative claims of classical and scientific education.

To make it practical, and if possible pointedly so, the method adopted will be to ask and answer practical questions. Two foundation points must first be premised. The first we term *lines of study*. There is, perhaps, in the educational world, no larger and plainer distinction than that between man and nature, as subjects of study. By the study of man, we mean that of language, literature, history, philosophy, etc. By the study of nature, we mean the study of mathematics, physics, chemistry, and natural history, in all their branches and applications.

As the infinite individual variety among mankind comes to be arranged, as plants are in the analytical key to a botanical textbook, into larger and larger groups, we shall finally find, I think, that the two largest divisions embrace those who prefer the study of man, or of the humanities, and those who prefer the study of nature; each class, however, best choosing its line of study, not to the exclusion, but to the subordination of the other.

Eventually, therefore, there doubtless will be, as there properly should be, and partially are now, two separate lines of educational institutions, corresponding to these two lines of study, — which we will term respectively humanistic and naturalistic, — and dating from the time when pupils begin to indicate marked intellectual preferences, if any.

If any. These words lead to the second preliminary point, — gradations of study.

In *primary education*, the child learns to read. He thus gains possession of the pass-key to all the doors of the temple of knowledge. Among others, the masterly self-educator, Hugh Miller, styled his learning to read the grand achievement of his life, since by means of it he could, by perseverance, acquire whatever else he desired.

Thus equipped with the key to all knowledge, *secondary education* steps in and gives the growing pupil a sufficient acquaintance with the varied treasure to enable him to judge whether he likes it, and desires more; and if any more, what. This, I take it, is the plain, common-sense ground of secondary education. It just covers and occupies the years within which intellectual tastes, if there be any, manifest their existence and their nature and direction. When these are well ascertained, the pupil becomes a student, and enters a new grade of education, adapted to his more developed and conscious powers.

If he desire to permanently pursue knowledge for the love of it, his place is in the old university, or the great library. Such is the study called "liberal," in the highest sense; liberal, that is, in gratifying the wants of the thirsting mind.

If he desire knowledge *only* as a means of gaining wealth, careless of self-expansion and improvement, he skips the college or university, and, with the minimum of liberal culture, enters the professional school, of whatever kind, which is suited to his purposes. This course, only, it is which deserves the often misplaced sneer at what is called bread-and-butter study.

But if, even from a loftier and more enlightened self-interest only, he argues that the well-disciplined mind will succeed better, other things being the same, in any practical calling, he takes first the college course, and then the professional one. And this twofold course, if pursued with a view to the greatest total of usefulness both to self and the world, is worthy of highest honor.

From this introduction, we proceed as proposed: —

QUESTIONS AND ANSWERS.

Mathematical, mechanical, or instrumental drawing (merely three names for the same thing), — this drawing and the underlying mathematics of it is now, so far as systematic graded education is concerned, almost wholly confined to the schools which, however named, we here call polytechnic schools; that is, to schools of essentially professional grade, and of the naturalistic kind.

This subject, it is now asserted, should not be so confined; but why not?

1. Because the elementary parts of it are as simple as the other usual requirements for admission to these institutions, and should therefore be among those requirements.

2. Because these elementary portions are a burdensome and

hindering interference with the higher and proper work of the same institutions.

3. Because a polytechnic school—located, as it commonly is, in a city, and necessarily having high rates of tuition—is too expensive a place in which to acquire a knowledge of elementary subjects.

How then should the general subject be distributed?

Answer. First. The elementary portions, embracing elementary operations with drawing instruments and materials, the necessary practical geometry, and the simpler applications of these to plan and elevation, and perspective drawing of regular objects, should be placed in those secondary schools, or departments of such schools, which style themselves "preparatory scientific," as being preparatory to the higher scientific schools.

Second. The general mathematical portion of the subject, comprehensively termed "descriptive geometry," and embracing the general theory and methods of representing solids upon planes, and of the exact construction of shadows and of perspectives, should be included in the mathematical departments of colleges, at least under elective studies; and especially in those colleges which announce "scientific courses" parallel with their classical ones.

Now, why should the principles and practice of elementary mathematical or mechanical drawing be included in the distinctively "English" or "scientific" preparatory schools or departments?

1. Because they would be highly useful to thousands, in each successive period of secondary pupilage, who probably would never otherwise gain a knowledge of them. This position is equally supported by reason and by broad and accessible statistics. Every one is liable to have occasion to design something, large or small, simple or complex; mechanical, architectural, scientific, or industrial. But as speech is the language of thought in general, and figures and signs the special language of arithmetic, so exact drawing is the language of exact design. The great Olivier was accordingly justified in speaking of the art of making and comprehending mathematical drawings as the art of *writing and reading the graphic language.* And as many never advance, or for their life-purposes never actually need to advance beyond a certain stage in their knowledge of language, so there are many to whom the simple and easy elements of mathematical drawing would be invaluable, even though they might never advance beyond them.

2. Because, in accordance with our definition of the ground of the existence of secondary education at all, that stage of school life should introduce its pupils, as a body, to the *beginnings* of every sub-

ject, of which they should have an opportunity to judge whether they would need or wish to know more.

3. Because elementary mathematical drawing is as elementary as other customary studies are, and should therefore, both logically and practically, be placed among such studies. This has already been implied in speaking of its equally proper exclusion, except as a requirement for admission, from polytechnic schools.

Why should the higher theoretical or general mathematical portion of the subject — descriptive geometry and the theory of perspective — be included in college, especially in college general scientific courses?

Answer. 1. Because this portion *is* a general and not a technical subject; the foundation of practice, but not practice itself.

2. Because it has a distinctive beauty and disciplinary power of its own, equal, as is believed, to those of other mathematical subjects; in the direction of conception of forms in space.

3. Because it would contribute materially, in connection with a general revision of college scientific courses (as immediately preparatory to professional ones), to adapt such courses to subsequent purely professional ones in polytechnic schools. Thus two highly desirable and mutually beneficial ends would be accomplished. Such college courses would be brought, far more than at present, into vital relations with the polytechnic schools, as immediate feeders to the latter. Also, a far larger proportion, than at present, of polytechnic students would have the benefit of previous liberal culture. As it is, such students come, in far too many cases, directly from secondary schools, with the result that broad-spirited polytechnic schools are driven to attempt the work of six years in four, in combining liberal and professional culture, and of necessity cramping both.

But if all this seems to be so plainly proved to be what *ought* to be, why has it not already been, and for a long time, too?

Answer. Partly for want of teachers; partly from the mighty force of custom and association, by which the teaching mind in all grades of institutions clings to customary subjects, and is absorbed in questions and discussions constantly arising in connection with them, and hence offers the resistance of inertia to the introduction of new subjects; partly, also, from dread of overcrowding school work.

How can these difficulties be overcome?

Answer. 1. Many teachers of preparatory schools could easily qualify themselves for something more fruitful of results in the life of the pupil than the mere use of copy-books ever can be.

2. Normal schools, generally, might, by means of non-resident special teachers, sufficiently train select classes of pupils, desiring to become teachers of the subjects named, in preparatory schools.

3. Polytechnic as well as college graduates might often beneficially turn their attention to teaching in the line of their previous studies.

4. Inertia in existing directions may be overcome by the deflecting force of wholesome meditation on the benefit to be conferred on hundreds of preparatory pupils and college scientific students, to whom the subjects contemplated are now comparatively inaccessible.

5. The difficulty of overcrowding school-work can only be met by a thorough revision and readjustment of it, rejecting from each of the two existing lines of study, customarily designated as "English" and "Classical," whatever is of *least* importance to it, so as to make room, without crowding, for what is *most* essential. Besides, if, by the graded distribution, already indicated, of the successive portions — elementary, general, and technical — of the whole field of mathematical graphics, among preparatory, college-scientific, and polytechnic schools, the courses in the latter, which are now sometimes too encumbered and hence extended, could be reduced to two, or at most to three years in length, by withdrawing subjects better given in preceding stages of education, the time so gained might be employed in somewhat lengthening the previous preparatory and collegiate courses; at least so far as the latter, as is not unfrequently the case with the alternative "scientific" courses, are of less than four years. Such action would be economical for the student, besides keeping him, in some cases, probably, under better influences; that is, influences at least better suited to his comparative immaturity.

Such, very briefly, with an intention and effort to make a dry subject interesting, if possible, is the *cause*, quite beyond and above any mere personal ends, for which its advocates have hitherto labored long, waited patiently, and made sacrifices; rejoicing meantime in every sign of progress towards the addition of their comparatively neglected branch to the list of studies, which, each in due proportion and degree, and relation to the varied wants of different learners, shall minister to the needs of common as well as higher education.

COMMON-SENSE IN CLASSICS.

ATTIC GREEK AND AUGUSTAN LATIN.

BY E. R. HUMHPREYS.

Continued from No. III.

IT will have been seen from previous remarks that it is not the object of the writer to magnify or exalt the importance and value of classical studies at the expense of what are generally termed the more practical and necessary branches of higher education; but to demonstrate, (1) what he himself thoroughly believes, that a certain *sound*, although limited knowledge of Greek and Latin is not merely a valuable and effective aid to the satisfactory prosecution of such studies, and especially to the attaining an intelligent acquaintance with our own language and its vast and various literature, but that it is an essential prerequisite to the thorough securing of those important results; (2) that this classical training can be acquired with a far less expenditure of time and labor, under competent instruction, than has generally been supposed necessary, and than probably was necessary under former circumstances and methods; and (3) that if this opinion is well founded, — as no small experience in education has convinced him is the case, — it becomes the duty of all leading organs of popular education, such as this magazine is acknowledged already by competent judges in America and England to be, to advocate such alterations and improvements in the public education of the country as shall enable every youth and maiden to acquire this most valuable preliminary training in Greek and Latin, at such an age as shall leave reasonable and sufficient time for entering upon, and all the more pleasantly as well as effectively prosecuting, those courses of professional or scientific study which are to prepare them more immediately for the duties of life, or for earning their living in life's "higher fields," as they are commonly — though, we think, not rightly — regarded.

If this end can be attained, as the writer entirely believes, an inestimable boon will be secured by the cause of sound education; and looking at the social and political circumstances of America, and the prominent position she has now reached among the nations of the world, he does not hesitate also to express the belief that it will very largely tend not only to correct and counteract some depressing elements that now exercise an evil influence, but also to elevate the

general education of the country to that high and yet "common-sense" plane which is essential to the maintenance and perpetuity of a pure and true republic.

The writer is well aware that the position herein taken, and the utilitarian objects advocated, may seem to many classical scholars to be of too low and material a character; but it is his duty and object to write in support of "education for the people," not of any one branch or specialty thereof on its own sole account. He may, without immodesty, claim to have given some proofs of his own love of classical literature; and therefore he hopes to be forgiven if he continues still to maintain, as he began to do more than twenty-five years ago, that in all knowledge, a sound knowledge of our own mother tongue should, by inherent right, ever ccupy the first place; and in all theories and systems of public education, that the interests of the many should be regarded in preference to the tastes or requirements of the few. So entirely is he possessed with these convictions, that did he not believe what he now advocates to be for the great and lasting benefit of general education, he would not presume to offer this paper to the readers of EDUCATION.

It is but the statement of a patent and familiar fact to observe that the nomenclature used in the various natural and applied sciences — which now, in a daily increasing ratio, justly occupy so prominent and important a place in all practical and professional education — has, with the universal approval of learned and scientific men, been almost entirely formed upon the basis of ancient Greek, which is allowed to surpass all other tongues, ancient or modern, in adaptability for the formation of words capable of expressing, in a clear and vivid form, both general and more minute distinctions and shades of meaning and definition, such as in modern languages — as in German, for example — can only be expressed by long and clumsy combinations, that are in fact little more than several simple words tacked together to make one long compound term, which after all merely presents to the eye and mind of the reader several distinct and unamalgamated images, from which he must extract for himself the complex idea, before he can satisfactorily proceed in his study. German is especially named, because more has been done in that noble modern language, to which our own is so closely allied, in this direction of forming compound scientific terms and names than in any other; and yet the most illustrious German scientific scholars do not attempt to deny the superiority of the Greek, and in a less degree of the Latin, language for forming words that express more various and more delicate shades of meaning and definition in less space and with greater clearness, —

with, moreover, the immense advantage of being readily understood by students of whatever nationality, who have acquired a moderate but sound knowledge of Greek and Latin. And be it added in praise of German education, that the securing of such knowledge for the native youth of Germany is a marked characteristic of its system and method.

The writer has long been largely and intimately acquainted with the great difficulties and discouragements encountered in this country by students of medicine, and also of the applied and natural sciences, which form the main subjects of study at those excellent and most important institutions, which have done so much in developing the rich and extensive natural resources of America, — the technological and scientific colleges and schools, — from the want of a preliminary training in Greek and Latin; and he rejoices to know that a large number of the ablest professors in those institutions are now ready to admit the great value of such a training, if it can be secured without the sacrifice of so long a time as has hitherto been considered necessary for the purpose.

Under ordinary circumstances, every person possessed of good taste and self-respect shrinks from referring to any labors or successes of his own in support of his arguments; but in a matter of this nature, so widely and deeply important in all its bearings, the majority of "common-sense" readers will probably attach more weight to a short and simple statement of facts, well known to a large body of public men and leading educators in this country and Great Britain, than to any long and labored theoretical "argument," merely, that might be made, with whatever ingenuity and eloquence it should be supported.

The writer, therefore, uninfluenced by any idea of self-exaltation or self-interest, — and yet more, without presuming to suppose that his own methods have been superior, if even equal to those of multitudes of other educators, — would simply and modestly allude to the experience on which the views maintained in this paper are founded. He has been a teacher for more than thirty years, during a large portion of which time he was master of a public school, which was raised from a decayed and fallen state to a condition of great usefulness and high reputation; and in various ways and capacities was called to advise and assist in promoting improvements in public-school education by the leaders of education, including two presidents and vice-presidents of her Majesty's Privy Council and one Prime and one Home Minister of Great Britain, where many of the methods suggested by him now form part of the system of public education. During the last twenty years, with the exception of one long period of in-

terruption from illness, he has been engaged in preparing candidates for Oxford, Harvard, and other American and English universities, and very largely in reading with teachers from various parts of the States, who have sought in their vacations, or by correspondence at other times, to refresh or improve their knowledge. He has also had under his tuition a large number of medical, legal, and technological students, who had realized, by painful experience, *the difficulties arising from their want of that previous classical training* to which reference has been made. The extensive communication into which he has thus been brought with teachers throughout America, to the number of upwards of nine hundred in the last five years, has made him, he believes, tolerably well acquainted both with the state of education in America generally, and with the qualifications and "spirit" of the men and women engaged in the great work of public education; and it has been a source of sincere pleasure to have practically learned, in this way, the thorough and intense earnestness of purpose by which the teachers of the schools of America — North and West and East, and to a considerable extent South, in Chicago and Cincinnati and St. Louis as well as in New York and Boston — are animated. In this earnest professional spirit of the great body of teachers, America possesses to-day a strong and solid foundation for advanced and enlightened education, which, *if wisely and sensibly guided, rather by common-sense and self-restraint on their own part* than by external dictation and direction, will, under God's blessing, be productive of the most beneficial results, socially and politically.

The public educational body of America — while doubtless susceptible of many improvements, as its own best members are the most ready to acknowledge — affords this day a material and basis inferior to none in the world, for effectively working out the great problem of national enlightenment and true, solid success, and of realizing the noble idea of a true and lasting republic, in which knowledge and virtue shall go hand in hand together on the road to social and national happiness.

The relations which the writer has had with students in the scientific and professional schools, and the knowledge thus acquired of their difficulties and wants, has been very valuable as a test of the opinions he had previously formed, on more limited data, of the value, or rather imperative necessity, of a certain amount of sound classical learning for all students whom necessity or inclination may lead to enter on those practical life-courses of training without graduating at a university. Whatever future progress in opinion and in action may bring about, it seems probable that for some time, per-

sonal need, or that eager desire for entering early on the practical business of life which is a marked characteristic of Young America, will continue to lead a majority of our youth to enter upon these professional studies, and especially upon those necessary for qualifying them to become civil, civil and mechanical, mining and railway engineers, architects and surveyors, without previously spending four years at a university.

These and other allied departments of public employment offer the best, most natural, and widest fields for the putting forth of that combined mental and physical energy and perseverance of which the youth of this country are pre-eminently possessed; and therefore it would seem that the more advanced stages of public education should, to a large extent, be so guided and arranged as to enable them to enter upon the special courses of study required at the scientific and professional schools, in a condition as well prepared as possible to understand and avail themselves of the instruction to be afforded them therein. Hitherto, in those schools, as also very largely at the universities, a very considerable number of the students, owing to a deficiency of such preparatory training (often resulting from no fault of their teachers, but rather from a want of judgment and common-sense on their parents' part, or of patience on their own), are engaged in a constant and irksome struggle with difficulties arising from *deficient preparatory training*, when they ought to be advancing solidly and steadily in the regular special studies of their several professions.

To revert very briefly to a fact of experience directly bearing on this point; the writer, having been strongly impressed with this same want as felt by many of his pupils in England, as well as by the deficiencies of the system generally pursued there in English education generally, was induced, at what proved eventually a heavy pecuniary loss to himself, but which he has never regretted, to add a new department, in the form of a scientific and technological school, to the old foundation school of which he was head-master. In that work he was generously and earnestly supported by a large body of liberal noblemen and gentlemen, and particularly by the late PRINCE CONSORT, and by an illustrious scientific man, — well known in, and connected by marriage with, this country, — Dr. Lyon Playfair, who was then the Prince's secretary, and able assistant in carrying out those views for the improvement of general education in Great Britain for which the Prince Consort unobtrusively, but very earnestly and effectively, labored all through his too short, but most noble and honorable life.

The plan adopted, in the case of such pupils as were not going

forward to the university, and therefore did not require a full classical education, was, after they had passed through a course of English, mathematical, and classical training, including a moderate but accurate knowledge of Greek and Latin, from their tenth to about their fifteenth year, then to allow them, while still proceeding with some studies, particularly higher English and the modern languages, in the classical school, to enter on the special courses in the new building, styled the Civil Service and Scientific Department, and thus qualify themselves to enter the London School of Mines, or the professional schools, or to compete at the civil-service examinations.

The result was, in every way, most satisfactory. At the end of the first period of two years, several young men thus prepared entered on the courses in London very successfully, two of them winning scholarships, and others winning appointment by competition in the Indian civil service; and in subsequent years the benefits of the plan have been increasingly realized. The writer has before him a long list of young men, many of them now distinguished in science, medicine, and in the civil service of India, — where two, the sons of widows in very narrow circumstances, are now district judges, with large salaries, — who were trained in this department. Another is a Fellow of Oxford and professor in the London University.

The writer was by this experiment confirmed in his belief that it was quite possible, in an English "grammar school" open to *all boys, however humble or poor,* of a large district, to give each a good English and general education, with a useful, accurate training up to a certain point in Latin and Greek, together with such scientific instruction as should qualify them better to derive full benefit from the instruction of the scientific and professional teachers of the higher institutions, *between the ages of ten and seventeen years.* All the pupils above referred to — two of whom won their civil-service appointments at the severe competitive examinations open to all England — entered on their professional life work when under twenty-two years of age.

The general school system of America — of which, in all its main features, the writer is an ardent admirer — differs so widely from that of Great Britain, that very probably many means and methods which have proved useful in the one country may not be equally adapted to the other. But, looking back carefully over the facts of his own experience in connection with education in both countries, he is led to entertain a belief that the same useful results might be — under modifications adapted to the differences of political and social insti-

tutions — secured in these United States at large more easily and promptly than they have been, to a considerable but limited extent, by the old "grammar or endowed schools" of Great Britain, aided by and co-operating with the civil-service examination board, and the middle-class examination boards of Oxford and Cambridge. Here public education is generously supported by the people as a fundamental and essential part of the political system. America has at the present moment a large, enthusiastic, and highly qualified body of educators of every rank and kind, from that of the learned and able presidents and professors of Harvard, Yale, Columbia, and other colleges, inferior to them in little but ancient prestige and pecuniary endowments, down to the masters and assistants in the public schools; than whom no country, in the writer's well-weighed opinion, can show, as a whole, a more earnest, conscientious, and efficient body of teachers. With such valuable aids and appliances, all on hand, and with the recent addition of the national council of education, elected from all parts of the Union by their brethren, — with the special object, it is presumed, of advising and promoting wise reforms and improvements, — much more may justly be expected of free and progressive America than is possible to be done for *all the people* in any conservative and class-arranged nation.

In his subsequent remarks the writer will state what seem to him to be needed and practicable improvements in the system, methods, and means of Greek and Latin instruction, with the especial view of rendering such instruction auxiliary to sound English and scientific education, and available, not only as it is in the old "grammar schools" of Great Britain, to the humblest and poorest *boy*, but also — what America has just cause already to be proud of — to the humblest and poorest *maiden* in the land. He feels it, however, due to himself to state that it has only been after earnest request from the conductors of this magazine, that he has consented to risk the charge of presumption by offering suggestions that will be read by so many men of far greater experience and acquirements than himself, — a task rendered all the more difficult by the fact that he is only able to do what he can towards its accomplishment, at short intervals, and literally at the *eleventh* hour of his daily course of labor. He can honestly say that in whatever he thus writes he has no personal interest to serve or feeling to gratify. He is glad and grateful to be enabled to pursue his duties as a tutor, and studies as a scholar, with fair health and energy, and he neither looks nor wishes for any more public sphere of duty. It has been the wish and work of his life to do whatever little he could in support of the cause of education, —

above all, sound "English" education, — and of the profession of the educator. Since he has become a citizen of America, where he has received so much kindness and consideration, he has endeavored, — and not in vain, — as a small return of gratitude, to disseminate fuller and more correct ideas of American institutions, and especially of American educators and education, in the mother country; and now he ventures to express the hope that any suggestions he may modestly offer will be accepted as at least given, not in a presumptuous or self-sufficient, but in a grateful, kindly, and brotherly spirit, to his brother teachers and to their pupils.

THE PUBLIC-SCHOOL SYSTEM.

I.

BY GEORGE HICKS.

THE success or the failure of the public-school system of America has an interest which reaches far beyond her own boundaries. In this matter many countries, now engaged in efforts to educate the people, look to America as their example, and rely largely upon her experience. Among the minor countries which are establishing and fostering a system of public schools is the island of Jamaica: an island that is now (not without opposing influences) slowly undergoing a process of transformation which will, I think, make the Jamaica of the future as notable for the prosperity of the many as the Jamaica of the past was proverbial for the wealth of the few. Our Jamaica authorities believe that a public-school system is one of the essential factors for producing a prosperous future, and it is considered that America furnishes conclusive proof of the soundness of this belief. It is not strange, therefore, that the article in the December number of the "North American Review," entitled "The Public-School Failure," has caused here in Jamaica a shock of profound surprise. The name of the author, Richard Grant White, is well known as one that carries much weight in matters of literary criticism; and he it is who makes the assertion, as positive as it is astounding, that the public-school system of America has completely failed, resulting in evil and not in good. If this be the case, public schools may as well be abandoned everywhere; for in one thing Mr. White is undoubtedly correct, and that is in his statement that in America the public-school system has been in operation under conditions "singularly favorable," and that "a better opportunity for testing its worth could not be hoped for." If it fails in America, where in all the wide world can it be expected to succeed? This is a matter which, as it concerns all humanity, is not foreign to any one, and I do not fear that comments sent from Jamaica will be deemed intrusive.

The January and February numbers of the "Review" have come to hand, and I find that of the thousands of very able men who are earnestly engaged in promoting the public-school system of America, no one has deemed it necessary to pause in his work in order to make any reply to Mr. White. Perhaps their silence is the reply most fitting. A point should ultimately be reached, in course of time, where some things might be considered as settled. In the

judgment of very many, the worth of public schools is a question which has reached that point, and is no longer a question. To them, therefore, it is not a matter of much consequence that Mr. White should turn aside for a moment from his usual line of literary studies, to pronounce his opinion, with extraordinary positiveness, in opposition to the judgment of a host of the most accomplished statesmen of the present and a former generation, whose conclusions were reached after a vast amount of careful research and thoughtful consideration. And yet it may be worth while to point out some of the errors and fallacies in which the article abounds. Although my personal knowledge of the public schools of America is not altogether so extensive as I could wish, and although I have not here access to all the reports and documents I might desire to consult, still, for my present purpose, I am quite sufficiently provided. The article is so weak at every point that almost any weapon will suffice. In very sooth the article is wholly unworthy of so great a theme. It outrages common-sense, and is ludicrously illogical and inconsistent with itself. It presents a few partial, exceptional, half-stated facts, and some statements which do not happen to be facts; and upon them are based broad generalizations, whose fallacy cannot but be apparent to any one at all conversant with the subject. The article has not even the redeeming merit of novelty; for substantially it reiterates errors which had been uttered and disposed of many years ago, and which have long since been consigned to the political waste-basket of Christendom.

The main drift of the article seems to be to show: —

1. The result of educating the people in America, through the public-school system, has been deplorable.

2. The public-school system does not educate the people.

In the present paper there will be space for considering only the first of these propositions.

The condemnation of the public-school system is most sweeping and indiscriminate. After stating, truly enough, that of all their institutions there is none in which the American people have more confidence or have felt a greater pride than in their public-school system, Mr. White says: —

"There is not one of them so unworthy of either confidence or pride; not one which has failed so completely to accomplish the end for which it was established. And the case is worse than that of mere failure; for the result has been deplorable, and threatens to be disastrous."

This arraignment of the public-school system is accompanied by

one of those flippant, pessimistic diatribes against an entire people which are so easily and frequently uttered, and which — though containing some particles of truth — are essentially false, but whose undoubted and evident falsity it is always difficult to prove in detail. Mr. White draws a picture which, in all its main features, is a counterpart of those that were presented to our fathers, and our grandfathers before them, as their likenesses. For the matter of that, it is but a paraphrase of Juvenal or Bishop Hall. In all ages, since the fabled Golden Age, some young men have been idle and vicious; in all ages some men have sought place and emolument by means of bribery and corruption; and in all ages and nations dishonesty in business has been so common that the fact has passed into the proverbs of all languages. But Mr. White has found something to say concerning the young women of America which is quite new. Never before has it been said by one of their countrymen that the young women of America have lost their modesty, and still worse, that "they do not even blush that they have lost it." I shall have something to say touching the relation of the public-school system to dishonesty and the modesty of young women, but I pass them now to consider the main statements of the article.

In the beginning of his article Mr. White asserts that the public-school system has completely failed, and that its results are deplorable. In the body of his article he declares that he has demonstrated "that its influence is not to make men good and thrifty and happy; that it is not adapted to produce the best government of the people." In the conclusion of his article we are again informed what is the "result" of the system established in America for the education of the masses of the people. Mr. White does not content himself with stating that along with the public-school system, or despite of it, certain alleged evils exist; but he sets forth such evils as the "result" of — *i. e.*, the effect produced by, the consequence of — the public-school system of America. He speaks of that system as "a system the result of which, according to the experience of half a century, is deterioration in purity of morals, in decency of life, in thrift, *and in all that goes to make good citizens.*" * If one will but think of it, this is a very grave indictment. Is there, can there be, any proof to sustain such a case? Mr. White assures us that his proof is conclusive. After making his vague, general, indefinite assertions as to prevalent idleness, corruption, dishonesty, immodesty, etc., he then adds something much more definite, which appears

* The italics here and subsequently are mine.

to be put forth as the most emphatic statement in the article, and which is as follows: —

"Moreover, there is evidence on record, evidence furnished quite independently of any investigation of the subject, which *proves the case* against the public-school system as *clearly* and *undeniably* as the truth of Newton's theory of gravitation is proved by the calculations which enable astronomers to declare the motions and to weigh the substance of the planets."

Really, this begins to look very serious! It would be difficult to frame a statement of more momentous importance. This challenges the attention of every State in the Union: the older Northern States, where the public-school system has long been established, and has a firmer hold to-day than ever before; the States of the Northwest, where, upon their first settlement, the public-school system was immediately adopted, and has since been in process of constant growth and advancement; and in every one of the States of the new South, where the public-school system is now accepted by Southern statesmen with a unanimity quite unexpected. Many, indeed, like Senator Brown, of Georgia, and Dr. Ruffner, of Virginia, support the system with entire cordiality, as a most wise and necessary instrumentality in the work of Southern regeneration. Even in South Carolina, Col. Hugh Thompson, State Superintendent of Education, reporting as enrolled in the public schools 61,218 white children and 42,853 colored children, says, "Our people are beginning to realize fully that the peace and prosperity which they have enjoyed for the last four years can best be continued and increased by providing for the education of all classes." With such sentiments, Massachusetts and South Carolina, so widely sundered in the past, will be drawn together in close sympathy. But is this change in the South a change for the worse? In the recent slave States 675,150 colored children are enrolled in the schools, — a fact that is pregnant with great results for the future. Is it such a fact as should fill the hearts of the citizens of America with dread? Would it be wise to return to the old paths, — burn the school-houses and imprison the school-teachers? Will the "result" be "deterioration in purity of morals, in decency of life, in thrift, and in all that goes to make good citizens," among the colored people of the South? Mr. White's statement does not concern America only. His "case" is made against the public-school system wherever found. It concerns all nations. The wisdom or unwisdom ot instituting a public-school system for the purpose of educating the masses has been under earnest discussion for half a century, and has been

subjected to minute and searching and far-reaching investigation, until finally all civilized nations may be said to have settled down upon the conclusion, and are now acting upon the conviction, that the education of all the people is essential to the public weal and national prosperity, and is necessary to prevent national decay. This is not the result of any weak sentimentality, nor the promptings of some sudden philanthropic impulse. As a rule, the result has been reached only after a fierce and prolonged struggle. It has been a hard-won victory. The ground has been contested inch by inch. Take the case of England: For many years very little headway was made; for the ruling classes seemed to agree with the author of the "Fable of the Bees," that "reading, writing, and arithmetic are very pernicious to the poor." According to Sir Samuel Romilly, the greater portion of the House of Commons, in 1807, thought it "expedient that the people should be kept in a state of ignorance." Governor Clinton, of New York, had said that "the first duty of government, and the surest evidence of good government, is to encourage education"; but England was very slow to adopt that principle in political science. It was only after a long contest and repeated defeats that the advocates of popular education, renewing their efforts in the Reform Parliament, were able in 1834 to carry a grant of £20,000. In 1839, when it was proposed to increase the grant to £30,000, and to secure efficient supervision of its expenditure, the contest was renewed, and the vote was passed by a bare majority of two,—a vote which constitutes an epoch in English history. How great was the opposition of the ruling classes is evident from the fact that the House of Lords, powerless to defeat the money vote, went in a body to the Queen to petition her to rescind the grant. Subsequent efforts to enlarge and extend the system, so as to bring education within the reach of all, met with determined opposition. The stubbornness of the opposition to popular education is seen not only in the votes but in the discussions of the day, in and out of Parliament. The comments of Coleridge are worth quoting: "Our statesmen, who survey with jealous dread all plans for the education of the lower orders, may be thought to proceed on the system of antagonist muscles, and in the belief that the closer a nation shuts its eyes the wider it will open its hands. Or do they act on the principle that the *status belli* is the natural relation between the people and the government, and that it is prudent to secure the result of the contest by gouging the adversary in the first instance?" After aptly comparing an ignorant population to a blind Samson, whose "darkness added to his fury without

diminishing his strength," Coleridge continues: "The error might be less unpardonable with a statesman of the Continent; but with Englishmen, who have Ireland in one direction and Scotland in another, — in the one, ignorance, sloth, and rebellion, in the other, general information, industry, and loyalty, — verily, it is not error merely, but infatuation." The opponents of popular education, in their turn, insisted that its advocates were the infatuated ones. A member of Parliament, ridiculing the idea of educating the laboring classes, exclaimed, "Was there ever anything more absurd? It really seems as if God had withdrawn common-sense from this House!" But in 1870, — another great epoch in English national education, — when the system was improved and largely extended, and the nation "set itself to work," in the words of Mr. Forster, "and organized itself to put down ignorance," all parties agreed in the necessity of providing "efficient, sufficient, and suitable" means for the education of the people. How thoroughly aroused England was to this work appears from the fact that while her population has increased 12 per cent since 1870, the school attendance has increased 108 per cent. The annual grant of £30,000, so grudgingly voted, and obtained only after a desperate struggle in 1839, has now reached a sum exceeding £2,000,000, which is voted without a dissenting voice. England at last has placed herself where her late poet would have her stand, securing education for all her children, —

> "So that none be forced
> To drudge through weary life without the aid
> Of intellectual implements and tools."

The position now decisively taken by England, that the government should maintain a public-school system to secure universal education, is the position taken by all the nations of Europe,* by the Dominion of Canada, by the English colonies in the West Indies and Australia and New Zealand, and even by Japan. It is noteworthy that, with the exception of Germany and one or two smaller states, this position is far in advance of that occupied upon this question of national education a dozen or fifteen years ago. Never before in the history of mankind was there such a general effort to give "intellectual implements and tools" to the toiling millions of the race. Nations that were sinking into decadence, and that are now striving to put on fresh life and regain lost position, are bending their energies in the line of popular education. In this new educational era, inspired by

* In Russia the scheme for national education is, as yet, far more comprehensive on paper than in practical operation; and in Turkey, of course, like all other reforms, it exists simply on paper.

the examples of America and Germany, nation vies with nation in the endeavor to perfect a public-school system which shall give the best possible instruction to the largest possible number.

And now comes Richard Grant White, and asserts that, tested under conditions "singularly favorable," the "result" of a public-school system of educating the people is "deterioration in purity of morals, in decency of life, in thrift, and in all that goes to make good citizens"; and he announces to the world that the proof of "the case against the public-school system" is as infallible as the unerring deductions of astronomical science.* The query is, What is it that everybody, everywhere, has failed to find, and that has at length been discovered? What is this proof which is to demonstrate, absolutely beyond question, that the quest of half a century has utterly failed, and that the most eminent men of all the nations, after diligent and prolonged search for the right path, have all missed the way? What is this new field of truth now disclosed, whose revelations shall overthrow the conclusions universally reached, after, as was supposed, all possible fields of inquiry had been most carefully explored? Well, it is all set forth in the following sentence:—

"The census returns show that crime, immorality, and insanity are greater in proportion to population in those [some] communities which have been long under the influence of the public-school system than they are in those [some] which have been without it."

Tush! That has been uttered many and many a time before this late day, and has received all the consideration it ever deserved. Mr. White's field of discovery is an old field, from which the harvest was gathered long ago, and thrashed out and winnowed and sifted, and the net results measured and weighed and duly labelled, and the chaff scattered to the four winds. What Mr. White produces, with so confident an assurance of its conclusiveness, proves to be as "stale" as it is "flat and unprofitable."

Some thirty years ago Sir Archibald Alison published the first volume of his "History of Europe" (second series), and in that volume he adduced various statistics to prove just what Mr. White has asserted with such a flourish; and the American essayist but copies the British historian in declaring that an increase of crime is the "result" (says the essayist), the "effect" (says the historian), of educating the people. Alison's statement is as follows:—

* Aristotle, in concluding the discussion of a political question ("Politics," B. VII., Ch. 7), modestly states that the matter was thus "nearly determined," and adds that he says "nearly" because absolute certainty in such matters of reasoning is not to be expected. Mr. White, however, admits of no particle of doubt in his reasoning.

"The utmost efforts have for a quarter of a century been made in various countries to extend the blessings of education to the laboring classes; but not only has no diminution in consequence been perceptible in the amount of crime, but the *effect* has been just the reverse, — they have both signally and alarmingly increased. Education has been made a matter of state policy in Prussia, and every child is, by the compulsion of government, sent to school; but so far has this universal spread of education been from eradicating the seeds of evil, that serious crime is *fourteen* times as prevalent in proportion to the population in Prussia as it is in France, where about two thirds of the whole inhabitants can neither read nor write. In France itself . . . the amount of crime in all the eighty-three departments is, without one single exception, in proportion to the amount of instruction received . . . In America the educated criminals are in most of the States of the Union three times the uneducated, and in some double only; in all, greatly superior in number.* These facts, to all persons capable of yielding assent to evidence in opposition to prejudice, *completely settle the question.*"

At about the beginning of the "quarter of a century" which Alison refers to, various discussions in legislative bodies, and a number of widely circulated publications, — such as John Foster's "Essay on Popular Ignorance" and Dr. Channing's "Lectures on the Elevation of the Laboring Classes," — had produced a deep interest in the subject of education, and stimulated active efforts in that direction; and Alison's subsequent statement (above quoted), supported by tables of statistics which seemed to disprove what were believed to be the irresistible conclusions of Foster and Channing, did not pass without exciting general attention and close scrutiny. Many opponents of popular education in England joined in the chorus of which Alison had given the key-note. The allegation that an alarming increase of crime is the *effect* of extending education to the laboring classes, was presented in every variety of statement, and tabulated statistics were relied upon to verify the allegation. The facts thus presented received ample consideration. The whole matter of the relation of popular education to national welfare was investigated with a patience and thoroughness and fulness which seemed to embrace everything and to overlook nothing; and what is the outcome? Did the facts marshalled by Alison "completely settle the question"? Did they

*The following is the statement made in 1871 by Hon. W. T. Harris, of St. Louis, relative to education and crime in America: "The average statistics of the United States show that out of *the small percentage* of people unable to read and write come about *one third* of the criminals, and of the remaining two thirds only one in a hundred had been educated in the higher branches."

settle it on either side of the Channel? The facts were not unknown in France. If there be one thing more than another which a French philosopher and political economist dearly loves, it is statistics, of which there has been no dearth in France. It was from the works of Malte-Brun, published in Paris, that Alison took his figures; and Herbert Spencer cites the names of various Frenchmen who have compiled statistics of a like purport with those reproduced by Alison. With the facts before her, and in full view of all those statistics which seemed to show that crime abounded fourteen times as much in educated Prussia as in uneducated France, behold! France is taking Prussia for her model, and is putting forth unexampled energy to secure for the people in France as universal and as thorough an education as has been achieved in Prussia! Not in France and not in Great Britain did Alison's formidable array of facts "*completely settle the question*": so far from it, all English statesmen concede that it is wise and necessary to expend a large portion of the national revenues in providing means of education for all the people; and they are now prepared to take the further step, and compel the people to receive education, whether or no!

But let the world pause in its educational career, and listen to Mr. White! He has his little handful of statistics to bring forward, which are again to "completely settle the question," and this time with scientific precision and mathematical certainty! His statistics are indeed a little later than those of Alison, but still not new. They are the statistics of the United States census of 1860; and it was after these statistics, together with those from all civilized countries, had been subjected to exhaustive analysis, that the statesmen of Great Britain, of France, of Italy, and other countries determined upon their unparalleled efforts to educate the people. However, let us see what it is that Mr. White pronounces to be so conclusive in proving "the case against the public-school system."

Mr. White compares the statistics of crime among the native white population of the six New England States and of six Southern States. In the New England States there had long been established a public-school system, and there were but few who could not read and write; in the Southern States a public-school system was almost or entirely wanting, and there were many who could not read and write: and the census returns show a greater amount of crime among "the native white population" of the New England than of the Southern States. His words are these: —

"New England society, formed under the public-school system, produced one native white criminal to every 1,084 inhabitants; while

the Southern States, which had been almost entirely without the system, produced only one to every 6,670, — a disproportion of more than six to one! [In Alison it was fourteen to one!] . . . Strange to say foremost in this sad record stand Massachusetts and Connecticut, which have had common schools since 1647 and 1650 respectively: the former producing one native white criminal to every 649 native white inhabitants: the latter, one to every 845."

A statement of two or three facts of secondary importance, and one fact of primary importance, which have been omitted, but should have been considered in making the above comparison, will suffice to show how delusive are these statistics.

It is (1) a matter of some consequence that in the New England States the population is compacted within a small area, and is largely employed in factories, where people are massed together; while in the Southern States the population is spread out over a large area, and not employed (in 1860) in factories. It is also (2) a matter of considerable consequence that in the New England States a very large foreign element exercises its influence upon society, while in the Southern States the foreign element is very small. (The 8,000,000 of foreigners in America have been greatly modified by American influence, but Americans, in turn, have not wholly escaped the modifying influence of the foreigners.) It is furthermore (3) a matter of serious consequence that in the New England States a very much larger proportion of the "native white population" are of *foreign parentage*. Comparing, for illustration of these points, the two States of Massachusetts and Virginia, which had about an equal population (1,231,066 and 1,219,630), — the former State being the most populous of the New England States, and cited as having the worst criminal record, and the latter being the most populous of the Southern States, — we have the following suggestive facts: Population to the square mile, — in Massachusetts, 158; in Virginia, 31. Foreign population, in Massachusetts, 260,106; in Virginia, 15,513. Native white population of foreign parentage (both father and mother), — in Massachusetts, 40 out of every 100; in Virginia, 2 out of every 100!* This last comparison is of much significance in itself, and it is also significant as furnishing one of many illustrations of the fact that Mr. White's statements are to be taken with the utmost caution. As he puts it, his comparison implies that for two centuries the population of Massachusetts had been from generation to generation under the influence of a public-school system;

* These latter figures are from the census of 1870, as I have not those of 1860; but the variation must be inconsiderable.

while the fact was that nearly one half the population were of foreign parentage! In Rhode Island 43 per cent of the population are of foreign parentage; and in a return of the commitments to the State Workhouse and House of Correction I see that out of a total of 4,364, those of foreign parentage numbered 3,156, or 72 per cent. To what extent the native white population of *foreign parentage* contributed to the criminal statistics given by Mr. White, we are left wholly uninformed; and without such information, of what value are his statistics? Does not every one concede the predominating influence of father and mother in forming the character of the child? The well-known words of Horace may be made to do duty once more:—

"Neque imbellam feroces
Progesserant aquilæ columbam."

The foregoing, however, are minor particulars. The most important fact omitted in the comparison is a fact the omission of which deprives Mr. White's statistics of any value or significance whatever. In the New England States the courts were open to all classes of the population for the redress of wrongs, and punishment was meted out for all crimes. In the six Southern States, at the time of the census of 1860, one third of the population were substantially without redress in the courts, and crimes against them were committed by "the native white population" almost with impunity. The census gives a return of crimes *punished through the courts*, and not of crimes actually committed, nor of crimes privately revenged. Considering that in those Southern States the courts of justice were, in effect, shut against one third of the population for any redress of wrongs suffered at the hands of white men, and considering how largely the *duello* prevailed, and to what extent "the native white population" were wont to avenge themselves without recourse to law, the comparison instituted between the New England and the Southern States is manifestly absurd. Considered with regard to the mass of statistics bearing upon the question of popular education and crime, the statistics given by Mr. White are pitifully meagre in quantity, while as to date they are stale, and in quality simply worthless; yet these are the statistics which are put forward as proving "the case against the public-school system" with infallible certainty!

The chariot wheels of educational progress throughout the civilized world may still roll on! Such statistics as these, paraded never so oracularly, will not check them. The statesmen of Europe are now, more than ever, keenly alive to any facts bearing upon the political and social and material progress of America; but from Mr. White's

statistics they will gain nothing valuable, and certainly nothing new. Not only have such facts as he exhibits long been known to them, but their information has extended much, very much further. They have not been content with the bare figures of the census tables. Great Britain, France, Germany, and other European nations have sent their agents to America to examine into the public-school system and its effects upon society. Like agents have been sent also into all countries where schools for the people have been established. Not only such facts as are given by Alison and White, but ten thousand other facts have been gathered from everywhere, and have been considered, digested, and debated; and the result of all the investigation and discussion is (let it be repeated), that with wonderful unanimity the rulers of all civilized states are striving with all their might to do that very thing which according to the historian will have the *effect* of increasing crime in a fourteen-fold degree, and which according to the essayist will *result* in "deterioration in purity of morals, in decency of life, in thrift, and in all that goes to make good citizens"!

While statistics are not to be undervalued, their value depends partly upon how they are selected, and partly upon how they are used. Opie, the painter, mixed his colors "with brains." Statistics are to be mixed with common-sense. Criminal statistics, for example, may show an unusually large amount of crime, or may show an unusually efficient enforcement of law. Pauper statistics may show an unusual lack of thrift, or an unusual degree of care for the poor. Facts not tabulated must be taken into consideration that tabulated facts may be rightly interpreted; and for certain facts — the shining of the sun at midday, for instance — a resort to tables of statistics, in proof or disproof, would be impertinent. Manifestly, the comparison Mr. White has instituted between the New England and the Southern States has utterly failed; and the failure of his attempt reminds one that in numberless instances those two sections of America have been subjected to comparison. Where is to be found the civilized government which has not at some time received reports from accredited agents, making such comparison with more or less of completeness? Of them all is it known, or is it conceivable, that there is any one which represents the bulk of the native white population of New England as furnishing an example to be carefully avoided in the matter "of morals, of orderly conduct, of thrift, industry, care for the public weal, and all that goes to make good citizens," and representing the bulk of the native white population of the Southern States as furnishing an example to be carefully imitated in

these particulars? Aside from the question of slavery, and omitting from the comparison the mill-owners and other wealthy men of the North, and the planters of the South, has not the difference between New England and those Southern States long been patent to all the world? And is it not well known that the testimony of a host of observers is clear and emphatic, and all one way? A lawyer, presenting and urging simply one side of a case, is said to be "deaf in one ear": what we may complain of in the case of Mr. White is, that he is wilfully blind in both eyes.

[*To be continued in the next number.*]

THE EASTERN COLLEGES FOR WOMEN: THEIR AIMS, MEANS, AND METHODS.

PART I.

BY JOHN TETLOW.

IT is my intention in the present essay to discuss some topics of interest connected with the five Eastern institutions which offer the higher education to women. These are: Smith College of Northampton, Wellesley College of Wellesley, Vassar College of Poughkeepsie, N. Y., the College of Liberal Arts connected with Boston University, and the so-called "Annex" at Cambridge. To facilitate the accomplishment of my purpose, which is to present a trustworthy though brief account of the present condition of these colleges, and to show how far they satisfy the demand which they were instituted to meet, I shall consider these institutions individually and comparatively under these several topics: (1) Requisitions for Admission; (2) Courses of Instruction; (3) Appliances and Methods of Instruction; (4) Students' Expenses; (5) Internal Economy. As the space required for the mere presentation of facts is considerable, I pass without further introduction to the first of these topics.

I. REQUISITIONS FOR ADMISSION.

On the requisitions for admission, assuming that these are obligatory on the candidate, and not simply advisory on the part of the college authorities, will depend the extent and quality of the work done in the preparatory schools, and by consequence the practicability of the college course of study of which this preliminary work forms the basis. Hence a careful though necessarily brief examination of these requisitions is essential, not only to a right understanding of what each college considers the ideal preparation for its course of study, but to a right appreciation of the advantages or disadvantages under which the college begins its own work.

The requisitions for admission to the colleges naturally divide themselves into seven departments: *Latin, Greek, Mathematics, Modern Foreign Languages, English, History and Geography, Physical and Natural Science.*

1. *Latin.*

The requisitions of Smith College in Latin are: Latin grammar, elementary Latin composition, Sallust's Catiline, seven orations of Cicero, and six books of the Æneid. Those of Wellesley and Vassar,

while they differ slightly in details, — substituting, *e. g.*, four books of Cæsar for the Catiline of Sallust, — are essentially the same. To these requisitions the College of Liberal Arts adds: One oration of Cicero and the Cato Major, three books of Virgil's Æneid or two thousand lines of Ovid, the Eclogues of Virgil, and the translation of Latin at sight. Instead, moreover, of requiring either Sallust's Catiline or four books of Cæsar, the College of Liberal Arts requires both. In other words, the requisitions of the last-named college are from one third to one half greater in Latin than those of Smith, Vassar, or Wellesley.

The "Annex" differs from the other colleges in permitting a liberal recognition of the elective principle in the preparatory schools. The managers of that institution appear to desire, not so much a specific amount of knowledge in prescribed departments of study, as the attainment of a fixed grade of intellectual culture. This may be reached by various roads. Thus there are two sets of requisitions in Latin, a minimum and a maximum. The minimum, which embraces somewhat less, perhaps, than the Latin requisitions of Smith, Vassar, or Wellesley, must be met by all applicants; the maximum, which embraces more than the Latin requisitions of these colleges, but less than those of the College of Liberal Arts, covers, in addition to the minimum requirement, a more extended range of reading and composition, which will be accepted as an equivalent for other specified subjects.*

2. *Greek.*

The requisitions in Greek at Smith College are: Greek grammar, elementary Greek composition, four books of the Anabasis, and three books of the Iliad.

At Wellesley the requisitions are substantially the same, the requirement in Greek composition being somewhat greater, and that in Greek translation somewhat less.

At the College of Liberal Arts the requirement in Greek composition is probably greater than at either of these colleges; and in Greek translation one book of Herodotus is added. As one book of Herodotus is equivalent in amount to about three books of the Anabasis, it will be seen that the requirements in Greek, as well as in Latin, are, at the College of Liberal Arts, about one third greater than at Smith or Wellesley.

* For the detailed scheme of entrance examinations on which these general statements are based, the reader is referred to the official circular recently issued by the Board of Managers. This may be obtained by application to Mr. Arthur Gilman, Cambridge, Mass.

At Vassar College the student may enter without any knowledge of Greek. The candidate must present, however, besides Latin, one other foreign language, which may be Greek, French, or German. For those who offer Greek the requirement is meagre, embracing only Greek grammar and two books of the Anabasis. In the regular college course, indeed, the same kind of instruction is given in Greek in the Sophomore year that is usually given in the preparatory schools two or three years before the end of the course. I mention this with no intention of speaking slightingly either of the requisitions or of the course of study at Vassar College; but merely to call attention to one of its characteristic features. The authorities of the three colleges previously considered require of the candidate substantial attainments in Greek as a foundation for the subsequent college course; the authorities at Vassar are willing to accept an equivalent knowledge of French or German. The interpretation to be put on this difference of requisition, and on the difference of ideal which it embodies, seems to be that the authorities of Vassar College do not consider a knowledge of Greek of essential value as a foundation for the higher education of women. Apart, moreover, from this difference in theory, it will be noted that the requisition at Vassar, in the department now under consideration, is scarcely half as great as at Smith or Wellesley, and scarcely one third as great as at the College of Liberal Arts.

At the "Annex" there is a wider range of election offered in Greek than in Latin. There are two examinations in this subject, a minimum and a maximum. For the former, the requirements are perhaps somewhat less than at Smith and Wellesley; for the latter, the requirements are fully equal to those established at the College of Liberal Arts. Again, it is possible at the "Annex," as at Vassar, for a student to enter with no knowledge of Greek, an equivalent in French and German being accepted. While, however, the managers of the "Annex" and the authorities of Vassar College appear to hold the same opinion as to the propriety of requiring Greek for admission, they differ widely in the degree of proficiency demanded of those who offer it. The maximum requirement in Greek at the "Annex" involves more than three times the amount of reading required at Vassar; and a substantial knowledge of both French and German, together with a course of reading embracing six standard works in each of these languages, constitutes the equivalent accepted.

3. *Mathematics.*

In mathematics the requirements of the colleges are nearly uniform. They may be stated briefly as embracing arithmetic, including the metric system, algebra through quadratics as given in the larger text-books, and plane geometry. Smith and Vassar, however, do not require the whole of plane geometry; and Wellesley and the College of Liberal Arts require a few subjects in algebra beyond quadratics. The maximum requirement in mathematics at the "Annex" includes solid geometry, logarithms, and plane trigonometry; but as, of the four maximum examinations established, only two are obligatory, it will be seen that these subjects may be disregarded.

4. *Modern Foreign Languages.*

At Smith College, neither French nor German is required for admission. As much knowledge of French as is represented by Part I. of Otto's French Grammar is, however, recommended. As neither French nor German is required for admission, this recommendation probably goes for little with most applicants. Accordingly, in the prescribed college course, provision is made for instruction in elementary French in the Sophomore year, and for elementary German in the Junior year. Such knowledge, therefore, as the student gains of the French and German literatures in her college course must be acquired after the middle of the Sophomore and Junior years respectively; for the first half of these years must be spent in securing a mastery of the elements.

At Wellesley, French and German are recommended for all candidates, but are required of those only who intend to take the scientific course or the course for honors in the modern languages. For the general course neither of these languages is required. As, however, both French and German are offered as electives to students in the general college course, and as one of these languages must be taken during the second, third, and fourth years of this course, provision is made for the instruction of beginners.

At Vassar College, the student must take, as a part of the regular college course, Latin and one additional foreign language. This second foreign language may be French, German, or Greek. According to the plan of electives established by the authorities, moreover, the choice must be made by the student before her admission to college; for the candidate is required to pass an entrance examina-

tion, not only in Latin, but also in that one of the three optional foreign languages which she elects to pursue during her college course. If, from the three foreign languages open to her choice, the student select Greek, she may graduate from the college without knowing anything of French or German; and the same is true, of course, of German and Greek if French be the language elected, and of French and Greek if German be elected. A third foreign language, however, may be taken with the approval of the Faculty. If the third language elected be Greek, the regular course, starting with the alphabet, is begun in the Sophomore year; if it be French or German, a condensed course, beginning with the elements of the language chosen, is taken, occupying both semesters of the Senior year. Subject to these limitations, the requisitions in French for admission to Vassar College embrace French grammar, La Fontaine's Fables, Follet's Les Princes de l'Art, Bôcher's College Plays; the requisitions in German include German grammar, Schiller's Wilhelm Tell, Lessing's Minna von Barnhelm, Grimm's Märchen.

At the College of Liberal Arts, the candidate must be able to translate French at sight; to this requirement, German at sight will be added in 1882.

At the "Annex," translation at sight of French or German is required; moreover, as has already been stated, the translation of English into both French and German, and a substantial course of reading in these languages, may be offered in place of Greek.

5. *English.*

In the department of English, Smith College requires English grammar and orthography; Wellesley, English grammar and English composition; Vassar, English grammar including analysis of sentences, and Hart's Rhetoric.

The College of Liberal Arts requires English grammar, Hart's Rhetoric, and for the next entrance examination an English composition on a subject to be taken from one of the following works, which the student must have read, with a view to this kind of examination, before entrance: Shakespeare's Julius Cæsar, Henry VIII., and Much Ado about Nothing; Prescott's Conquest of Mexico or Ferdinand and Isabella; Longfellow's Hiawatha; and Whittier's Snow-Bound.

At the "Annex," an English composition is required on a subject to be taken, at the next entrance examination, from one of the following works: Shakespeare's Hamlet or Romeo and Juliet; the first two books of Milton's Paradise Lost; Goldsmith's She Stoops to Conquer;

Irving's Life of Goldsmith; Hawthorne's Our Old Home; George Eliot's Silas Marner; and Scott's Abbot. No examination is required of the candidate in English grammar.

With regard to the authors prescribed by the two institutions last named, it may be noted, in passing, that the lists for the same year, 1881, are wholly distinct. Accordingly, preparatory schools having pupils fitting for both institutions must, if they select one set of authors to the exclusion of the other, imperil the success of some of their pupils at the examination; and if they take both sets, must do twice as much work in this department as either institution thinks necessary. Further, it is much to be regretted that four of the five institutions here considered seem to give their sanction to the weary and wasteful, if not obsolescent, system of instruction in analysis and parsing. The last catalogue of Vassar College contains, in a specimen entrance examination in English grammar, a question which calls for the analysis of the following sentence: —

"It was also true that the Earl of Lauderdale, who, both from his high talents and from the long imprisonment which he had sustained ever since the battle of Worcester, had a peculiar title to be consulted on Scottish affairs, strongly advised the king that he should suffer his Northern subjects to retain possession of their darling form of worship."

The examination in English as conducted at the "Annex" does not include English grammar as such, and is to be commended as being rational in method and sufficient in scope.

The requirements of the College of Liberal Arts in English, as in Latin and Greek, are from one third to one half greater than those of the other colleges.

6. *History and Geography.*

No entrance examination is held at Smith College in either history or geography. At Wellesley, the requirement in this department is modern and physical geography; at Vassar, modern geography and the history of the United States; at the College of Liberal Arts, modern geography (including physical and political), ancient geography, modern history (including general history and the special history of England), and the history of Greece and Rome; at the "Annex," the history of Greece and Rome and ancient geography.

It will be seen that the requirements of the College of Liberal Arts in the department of history and geography, as in the departments previously mentioned, are considerably greater than those of any other college.

7. *Natural and Physical Science.*

No knowledge of any of the natural or physical sciences is required for admission to Smith, Wellesley, or Vassar. The College of Liberal Arts requires the elements of chemistry and the elements of physics; the "Annex" requires elementary physics, and as an optional equivalent for other subjects, a more extended course in physics, together with elementary chemistry or elementary botany.

The Exceptional Standard of the College of Liberal Arts.

Those who have followed attentively this comparative sketch of the requisitions for admission to the several colleges must have been struck by the exceptionally high standard of admission represented by the requisitions of the College of Liberal Arts. If the present article had been published four months ago, it would have been necessary for me to refer to the impracticability of this exaggerated standard, and to show, by the history of school legislation in the city of Boston for the past three years, that the attempt to maintain it would result in depriving the College of Liberal Arts of the influence which it might otherwise claim to exercise over secondary instruction. Happily, however, this necessity no longer exists. The following extracts from President Warren's last annual report will show that changes have already been made in the requisitions for admission in Latin, Greek, and mathematics, and that other changes are in contemplation. In pursuance of the policy here outlined, indeed, an official circular announcing an acceptable alternative scheme of requisitions, to become immediately operative, has been recently issued by the Dean of the College.

"In the annual report of two years ago, attention was called to the advantages which would accrue to the cause of education, to the colleges, and especially to the preparatory schools, if uniform requisitions for admission could be agreed upon by the Faculties of the leading colleges.

"Since that time the movement has made unexpectedly rapid progress. In the autumn of 1879, by the concerted action of ten of the New England colleges, — to wit, Harvard, Yale, Brown, Dartmouth, Williams, Amherst, Wesleyan, Trinity, Tufts, and our own, — arrangements were made for the holding of four conferences of examiners for the purpose of testing the practicability of agreement upon requisitions in the four departments of Greek, Latin, mathematics, and English. On the 22d of December these conferences were held, — the Greek examiners meeting at Cambridge, the Latin at New Haven, the mathematical at Providence, and the English at Hartford. In each case the conferences arrived at results almost unanimous; and when the requisitions recommended by them respectively were submitted to the different Faculties, the responses were, in general, much more favorable than had been anticipated by the original promoters of the plan. Since that time a majority of the above-named institutions have either modified their entrance requisitions in the direc-

tion of the recommendations of the examiners, or have decided to do so in season for the catalogues and circulars of the present year. As further conferences are already provided for during the present year, there is good ground to anticipate the entire success of the movement at an early date.

"In view of the great desirableness of this intercollegiate co-operation, and also in view of the fact that some of the reasons which four years ago rendered it wise to raise our standard of requirements for admission to an unprecedented height are disappearing, and with the erection of more commodious buildings will wholly cease, our Faculty have voted to adopt, as an alternative set for the coming year, those agreed upon by the conferences of examiners in Greek, Latin, and Mathematics. They have also voted that as soon as a majority of the other colleges shall come to an agreement upon the remaining subjects, they will recommend the adoption of the entire set as the only requisitions for admission to the College of Liberal Arts."

Admission by Certificate.

At three of the colleges whose requisitions I have been considering, — viz., Smith, Wellesley, and Vassar, — certificates of qualification from accredited teachers are accepted in place of an entrance examination in all subjects required for admission. Students admitted on certificate are of course placed on probation, and must vindicate their claim to exemption from examination by passing successfully the usual tests of scholarship that belong to the early part of the college course. The teacher whose certificated pupils fail to sustain themselves after admission ceases to be an "accredited teacher." The College of Liberal Arts accepts certificates in arithmetic, English grammar, geography, modern history, physics, chemistry, the history of Greece, the history of Rome, and ancient geography. The "Annex" does not accept certificates at all.

The Preparatory Department at Vassar.

Only one of these colleges, Vassar, now has a preparatory department. This department at Wellesley was discontinued last year. Applicants for admission to the Preparatory Department at Vassar must pass a satisfactory examination in English grammar, arithmetic, modern geography, and United States history; or must present the New York Regents' certificate of qualification in these branches. No instruction is given in these subjects, therefore, in the preparatory department of the college; and the course of study, which occupies two years, is devoted exclusively to the remaining subjects required for admission to the college proper. In a letter written in answer to some inquiries which I found it desirable to make in the preparation of this paper, President Caldwell says: —

"The Preparatory Department and the Art Schools are annexes of the college proper which seem to be required at present. The first may at some time be eliminated. But it

gives the advantage of a preparatory matched to the college course, making the whole continuous, and economizing time and work. Our theory is to prepare for college in two years and with the majority of students we do it."

II. Courses of Study.

1. *Elective Work.*

At Smith College, rather more than two thirds of the entire work of the college course is prescribed; about one third, therefore, is elective. The proportion of elective work, which during the Freshman year is one eighth of the whole, increases gradually in the subsequent years, until in the Senior year it is nearly one half.

At Wellesley, all the work of the Freshman year is prescribed, except for students who pass, at the time of entrance, an examination on the prescribed Greek or Latin of the Freshman year. For such students, French or German is an elective study. During the remainder of the college course, about two thirds of the work is prescribed, and about one third elective.

At Vassar College, the work is prescribed up to the middle of the Sophomore year, except that, as only one foreign language besides Latin is required, the student may elect for this required foreign language Greek, French, or German. During the remainder of the course, all the work is in a qualified sense elective; that is, the student selects, from the subjects assigned to a given semester, three full studies requiring five recitations a week each, or an equivalent in half studies. While, therefore, a certain amount of work must be done, and while the range of selection is limited, all the subjects taken are selected by the student, not imposed by the Faculty.

At the College of Liberal Arts, all the work of the Freshman and Sophomore years is prescribed; in the Junior year, one half of the work is elective; during the first two thirds of the Senior year, one half of the work is elective and one half prescribed; and during the remaining one third of the year all the work is elective.

At the "Annex," a liberal programme of studies is offered, and all the work is elective.

2. *Distinct Courses.*

While all the other colleges of the group under consideration arrange the subjects of study in a single course, offering, at the several stages of this course, a liberal choice of electives, Wellesley arranges the subjects taught in seven courses. These are: 1. The

general college course, which is recommended for most students. 2. The course for honors in the classics. 3. The course for honors in mathematics. 4. The course for honors in modern languages. 5. The scientific course. 6. The five-years' musical course. 7. The five-years' art course. The first five of these courses cover each four years, and do not include music or art studies. It must not be supposed, however, that these five courses are wholly distinct from one another. They embrace the same subjects, but differ from one another in the relative prominence assigned to each. That is, subjects which in one course are prescribed, are in another course offered as electives. In the course for honors in the classics, for example, all the Latin and Greek contained in the general college course is made obligatory; whereas, in the general college course, Latin and Greek are elective studies after the Freshman year. In the course for honors in the modern languages, French and German are required throughout; and in the mathematical and scientific courses a like prominence is given to mathematics and the sciences respectively. In other words, these five courses are, in effect, one course, liberally supplied with electives and arranged in such a manner as to guide the student to the best possible choice of the electives offered. The five-years' musical and art courses are formed by combining a one-year's course in music or art with one of the four-years' collegiate courses. The two courses, thus combined into one, are rendered more disciplinary in their influence and more fruitful in their results, however, than they would be if taken separately, from the fact that each is spread over a period of five years. By this device, moreover, the collegiate course and the musical or art course may be taken in connection, without the risk of undue pressure on the one hand or of superficial work on the other.

3. *Music and Art.*

Three of these colleges, Smith, Vassar, and Wellesley, receive women exclusively. The College of Liberal Arts receives women on the same terms as men, and offers them the same courses of study in the same classes. The "Annex" receives women only; but provides for them substantially the same courses of study, though with some omissions, that are provided for the students of Harvard University. The two institutions last named do not, in their courses of study, recognize any real or supposed necessity for special adaptation to women. At the first three colleges, on the other hand, as might have been expected, the æsthetic subjects, to which, in general soci-

ety, women devote more attention than men, have a prominent place.

Accordingly, at Smith College, music, drawing, painting, etc., are included among the elective subjects, and stand on the same footing as the other electives with which they are associated. As, moreover, these electives are offered in all the years of the college course, it is possible for the student to combine systematic and progressive study in music or in drawing, painting, etc., with the other subjects of the college course. Lectures are given on architecture, sculpture, painting, and household decoration; also on acoustics and the physical science of music, and in the theory, history, and interpretation of music. A special school of music, with a course embracing the equivalent of two years' exclusive study, and providing instruction in any branch of music, theoretical or practical, has recently been organized at this college.

I have already spoken, in the discussion of a previous topic, of the five-years' courses in art and music at Wellesley College. A reference to the detailed scheme of instruction laid down in the college calendar will show that these courses are as liberal in scope, and as systematic and progressive in character, as those in any other department.

At Vassar College, also, there are courses in vocal and instrumental music, and in drawing, painting, and modelling. The full course of instruction in the school of painting covers three years; but resident students taking this course are required to pursue two collegiate studies in connection with it, unless specially excused by the president. The arrangement of work is such that students in the regular college course may take one music or art study in addition to their collegiate studies; and except for special reason, they are advised to take it as a valuable addition to their education.

I have intimated that there is nothing in the curriculum of the College of Liberal Arts corresponding to the music and art courses in the three colleges of which I have just spoken. In partial modification of this statement, I should add that a College of Music forms one of the departments of Boston University, and that this college has a certain official connection with the College of Liberal Arts. But while students in the College of Music may pursue certain subjects with the classes in the College of Liberal Arts, the students of the College of Liberal Arts appear not to be admitted to class instruction in the College of Music.

At the "Annex," instruction is given in harmony and counterpoint, in the history of music, and in the instrumental music of Haydn, Mozart, Beethoven, and their successors.

4. *Collegiate Studies of the Junior Year.*

It would, of course, be impossible for me to give a complete list of the subjects taught in these colleges from the beginning to the end of the college course. For such detailed information I must refer the reader to the printed documents issued by the colleges themselves. I may, however, by presenting a complete list of the studies of a single typical year, convey an adequate notion of the scope and variety of the subjects taught. For this purpose, I have selected the Junior year. At this point in the college course, all the heterogeneous elements of which a class at entrance is made up may fairly be supposed to have become harmonized; and an adequate foundation has been laid for the best work of which the college is capable. The students have now received the stamp of the college, and are becoming sufficiently mature to be trusted very largely to select for themselves the studies which they can most profitably pursue. At this stage the college begins to reap what it has sown. Those who are still left in the class will probably remain to the end of the course; and will be recognized by the Faculty and by the community at large as fair exponents of the results of the college training. The studies of the Junior year may, therefore, without serious risk of error, be cited as illustrating the kind of higher education furnished by these colleges.

(*a.*) *Smith College.*

At Smith College the prescribed studies of the Junior year are as follows: —

1. *German*, four hours a week through the year; German grammar and German composition are studied, and Whitney's Reader and Schiller's Tell are used for translation.
2. *Hill's Rhetoric*, with lectures, three hours a week during the autumn term; *English Composition*, one hour a week through the winter.
3. *Jevons's Logic*, with lectures, six hours a week during the first six weeks of the year.
4. *Ganot's Physics*, with lectures, including Mechanics, Sound, Electricity, Light, and Heat, four hours a week, or its equivalent, through the year.
5. *Physiology*, lectures, one hour a week, through the winter.
6. *Elocution*, six lectures and exercises in the course of the winter.

The number of hours a week devoted to these prescribed subjects is, for the autumn, thirteen; for the winter, ten; and for the spring, eight. This arrangement leaves for the following elective subjects in the autumn, two or three hours a week; in the winter, five or six; and in the spring, seven or eight.

The subjects among which the hours assigned to elective work may be distributed are: —

1. *Biblical Study*, including lectures on the Canon and books of the New Testament, one hour a week, autumn and winter.

2. *French*, three hours a week during the autumn and winter, and two during the spring The authors and subjects studied are: Molière's Les Femmes Savantes; La Fontaine's Fables; Corneille's Cinna; Selections; French composition.

3. *Mathematics*, Olney's Calculus, three hours a week during the autumn.

4. *Anglo-Saxon*, one hour a week in the autumn, and three hours a week in the winter. Subjects: Extracts from the works of Alfred and Ælfric; extracts from Beowulf and Judith.

5. *Analytical Chemistry*, through the year.

6. *Greek Tragedies*, three hours a week during the winter.

7. *Latin*, two hours a week during the winter, four hours a week during the spring. Subjects: In the winter, selections, with lectures on the history of Latin literature; in the spring, Juvenal and Horace.

8. *Logic*, one hour a week during the winter term, and two hours a week during the spring term. Subjects: Mansel's Prolegomena Logica; lectures on the psychological basis of logic; Bain's Induction; lectures on induction.

9. *Biology*, lectures two hours a week during the winter term.

10. *History*, four hours a week during the spring term. Subjects: Mediæval History; recitations from the Epoch Series (Church's Beginnings of the Middle Ages, and Johnson's Normans in Europe), with lectures on the beginnings of church and state.

11. *English*, four hours a week during the spring term. Subjects: Chaucer's Prologue and Knight's Tale; lectures on the Norman influence on the English language and literature; critical study of Shakespeare.

12. *Old German*, three hours a week during the spring term. Subjects: Niebelungen Lied, Gudrun, etc.

13. *Zoölogy*, lectures two hours a week during the spring term.

14. *Art and Music*, through the year.

15. Also any of the elective courses offered for the winter and spring terms of the Sophomore year.

(*b.*) *Wellesley College.*

At Wellesley College the prescribed subjects of the general course, in the Junior year, are as follows: —

1. *Physics*, through the year.

2. *Logic*, during the last term of the year.

3. *History, English Literature, Essay Writing, Elocution.* The proportionate amount of time devoted to these four subjects is not indicated in the published calendar, nor is there any statement of the topics embraced under them.

4. *Either French or German*, through the year.

Subjects in *French:* History of the French literature of the seventeenth and eighteenth centuries. Authors: Pascal, Corneille, Molière, Racine, Mme. de Sévigné, La Bruyère. French essays.

Subjects in *German:* Lessing's Nathan der Weise; Barthel, Deutsche Nationalliteratur der Neuzeit; essays in German.

Further, one of the following elective subjects must be taken throughout the year, and one for two terms: —

1. *Mathematics*, including differential calculus, integral calculus, and analytical geometry of three dimensions.

2. *Latin*, including the Agricola of Tacitus; the Captivi of Plautus; selections from Juvenal; selections from the Fasti and Tristia of Ovid; and Latin verse composition.

3. *Greek*, including selections from Demosthenes; the Alcestis and Medea of Euripides; the Prometheus of Æschylus; the Antigone of Sophocles; and English into Greek from dictation.

4. *Mineralogy*, including the use of the blow-pipe; *Lithology; Geology; Chemistry*, including qualitative analysis and volumetric analysis, and lectures on chemical theories; *Botany*.

(*c.*) *Vassar College.*

At Vassar College every student selects, from the subjects taught during the year, three full studies requiring five recitations a week, or an equivalent in half studies, for which there are only half as many recitations, the election being subject to the approval of the Faculty. The subjects assigned to the Junior year are as follows, there being no indication in the catalogue as to which are "full" or which are "half" studies: —

1. *Latin*, Tacitus.
2. *Greek*, including the syntax in the grammar; Xenophon; Homer.
3. *Rhetoric*, Hill's Science of Rhetoric.
4. *Logic*, Jevons's.
5. *Natural History*, Dana's Mineralogy and Geology.
6. *Astronomy*, Godfray's.
7. *Physics*, including force and motion; hydrostatics and hydraulics; pneumatics; electricity; undulations; sound; heat; light.
8. *Physiology*, lectures with references.
9. *English composition; Elocution.*

In addition to the required number of collegiate studies, the student may take one of the following art subjects: *Vocal* or *instrumental music*, *drawing*, *painting*, *modelling*. If *music* be taken as a collegiate study, *harmony* must be included.

Those who have noted attentively the meagre form of statement under which the Vassar course of study is here presented — I have given it substantially as it stands in the catalogue — have probably drawn one of two inferences: either that text-book instruction enters largely into certain departments of study, or that the authorities at Vassar College have yet to acquire the art of making the printed course of study suggestive of the work done in the class-room and laboratory. From a recent careful examination of the manuscript scheme of work in one of these departments, and from a personal acquaintance with the instructor's methods in another, I am able to say that the second of the foregoing inferences is the correct one; and that the bare titles "Hill's Science of Rhetoric," "Jevons's Logic," "Dana's Mineralogy and Geology," and "Godfray's Astron-

omy," are not intended to convey the impression that these text-books, rather than the subjects of which they treat, are made the subjects of study.

(*d.*) *The College of Liberal Arts.*

At the College of Liberal Arts the prescribed studies of the Junior year are as follows: —

1. *Rhetoric*, four hours a week during the first term.
2. *Biology*, four hours a week during the first term.
3. *Psychology*, five hours a week during the second term.
4. *History*, three hours a week during the second term.
5. *Logic* and *theory of knowledge*, five hours a week during the third term.
6. *English literature*, three hours a week during the third term.

In addition to the foregoing prescribed subjects, all regular students are required to take from the following list of electives a sufficient number of subjects to make not less than fifteen, and not more than seventeen class exercises per week.

1. *Calculus*, two hours a week in the first term; and *Calculus* or *Mechanics*, two hours in the second term.
2. *Chemistry*, six hours a week in the first term, and two hours in the second and third terms.
3. *Zoölogy*, three hours a week in the second term.
4. *Botany*, two hours a week in the third term.
5. *Geology*, four hours a week in the third term.
6. *French*, two hours a week in the first term.
7. *German*, *Greek*, *Latin*, and *Spanish* or *Italian*, each two hours a week throughout the year.
8. *Roman Law*, two hours a week in the third term.

I have presented the foregoing subjects as they stand in the Year Book, in which there is no indication of the topics or authors embraced.

(*e.*) *The "Annex."*

At the "Annex," as I have already stated, a liberal programme of electives is offered, and the student makes her own selection. As these electives are not arranged according to years, I must refer those desiring detailed information to the last official circular of the managers.

III. Appliances and Methods of Instruction.

The appliances for instruction accessible to the students of Smith College are: a small reference library, containing less than 1,500

volumes stored in a small room; the public library of Northampton, containing 12,000 volumes and having a permanent endowment of $40,000 for its increase; the art and scientific collections of Amherst College, and the conservatories of the Agricultural College, both these institutions being within easy reach of Smith College; an art gallery of moderate pretensions; a somewhat meagre physical apparatus; and a good working laboratory for chemistry and determinative mineralogy. It will be seen that, at present, Smith College is largely dependent on its neighbors for auxiliary appliances for instruction. It needs no demonstration to show that borrowed appliances are less available than those that are owned. The authorities of Smith College are making commendable efforts to increase the resources of the college in this direction; and it is to be hoped that the friends of the institution will respond to these efforts with material aid.

The appliances for instruction at Wellesley College are: first and most important, a well-selected library of about 20,000 volumes. Besides this general library, there are five minor special libraries, viz.: the botanical library; the library of biology and zoölogy; the chemical library; the physical library; and the Gertrude library for Biblical study. Connected with the general library is a reading-room, where more than a hundred literary reviews and magazines, and the best scientific journals in every department, from England, Germany, France, and the United States, are accessible to both teachers and students. There are, in constant use in the different scientific departments, sixty-five microscopes, of patterns varying with the work to be done. For work in biology, each student is furnished with a microscope and two or three objectives, a complete set of dissecting instruments, and a case of twenty reagents. For comparative anatomy, there is a collection of skeletons of vertebrate animals, models of invertebrate animals, a manikin, etc. In the botanical department, the appliances for the direct study of nature are excellent. There is a greenhouse for the supply of plants during the winter, a large herbarium, and a considerable collection of plant models. Compound microscopes are furnished in sufficient number for the use of the classes in this department. There are equally good appliances for the experimental study of physics, mineralogy, lithology, physical astronomy, and chemistry. For the classes in English literature, there are (besides the works of the authors studied, contained in the general library) a special Shakespeare library, and the publications of the early English Text Society, the Chaucer Publication Society, and the Camden Society. The appli-

ances for advanced study in French and German are considerable. In short, Wellesley College, being isolated, and therefore dependent on its own resources, aims to purchase, and to have on the spot, whatever is needed by the student for individual study and investigation; and, in view of the short time that has elapsed since the organization of the college, it must be admitted that surprising success has been achieved.

At Vassar College there is a library of 14,000 volumes, selected with special reference to the needs of the various departments of study. The reading-room connected with the library receives, in addition to daily and weekly papers, about forty of the leading scientific and literary periodicals, — American, English, German, and French. This institution, being the oldest of the colleges established for women, has, perhaps, at present, more extensive scientific and art collections than any other. The museum of natural history embraces a cabinet of minerals containing more than 10,000 specimens, besides models, relief-maps, sections, etc. The palæontological collection contains nearly 5,000 fossils from the standard localities of Europe and America. The cabinet of zoölogy comprises: 500 mammals, birds, and reptiles from South America; representative vertebrates from our own country; a collection of insects; a collection of shells, corals, and other radiates. The department of ornithology, which includes the Giraud collection of North American birds, comprises about 1,000 mounted specimens, representing more than 700 species. There is also an anatomical cabinet containing skeletons, models, etc. The astronomical observatory has a meridian circle with collimating telescopes, a clock and chronograph, an equatorial telescope, and a portable telescope. The gallery of art contains, besides plaster casts and autotype and lithographic copies of celebrated works, a collection of more than 400 oil and water-color paintings by contemporary artists.

The three colleges whose appliances for instruction I have thus far enumerated, all have an organ, pianos, and a musical library.

It is hardly necessary for me to speak of the appliances for instruction accessible to the students of the "Annex" and of the College of Liberal Arts, further than to indicate the sources from which they are derived. All the instruction of the students at the College of Liberal Arts in physics, biology, chemistry, geology, and zoölogy is given in the laboratories and lecture-rooms of the Massachusetts Institute of Technology. The instruction is, in each case, arranged expressly for the class, is given by the regular professors of the Institute, and is illustrated by the collections and apparatus

under the control of these professors. The students also have free access to the public library and reading-room of the city of Boston, to the museum of the Boston Society of Natural History, the Way collection of Egyptian antiquities, and the art collections of the public library and of the Museum of Fine Arts.

The students of the "Annex" have access to the library of Harvard University, and are admitted to the readings and lectures given to the students outside of the college course. The scientific departments of study now open to "Annex" students are: Physics, descriptive and experimental; crystallography; mineralogy; physical geography; structural geology; meteorology; laboratory instruction in microscopic anatomy, physiology and development of plants; lectures on zoölogy, and laboratory work in the anatomy and histology of animals. These subjects are studied under the same advantages as to collections and appliances enjoyed by the Harvard students. No instruction is given at present in chemistry, as there are no laboratory facilities now available.

Of the methods of instruction in use at these several colleges — except so far as methods may be inferred from appliances — I hesitate to speak. I have spent a day at Wellesley College, also a day at Smith College, listening to class exercises. At the former, I saw botany, chemistry, and physics, excellently taught; at the latter, Greek, mental philosophy, and determinative mineralogy. If I should venture to express an opinion from a single day's observation, I should say that Wellesley is stronger in the direction of the sciences; Smith, in the direction of philosophy and the classics. But I do not venture upon any such generalization. I could not, in a single day, hear everything; nor could I, from a single exercise, form an estimate that would do justice to the department represented. Some subjects seemed to me but indifferently taught. I am perfectly well aware, however, that a second or third visit to the same class-room might have reversed this impression. I did not see any subject badly taught. What struck me as especially noteworthy, in these colleges for women, was the evident interest of the students in their work, and the perfect decorum that characterized all class exercises. The nervous energy of the teachers was spent in teaching, not in efforts to keep order. It was evident that young women, when they become college students, do not forget to be ladies.

As I have never been present at any of the exercises at Vassar College, at the College of Liberal Arts, or at the "Annex," it would be an impertinence on my part to express any opinion of methods

of instruction with which I have become acquainted only at second hand.

Instructors.

At Smith College, there are, including professors, lecturers, and teachers, twenty-two instructors. Of these eleven are men and eleven women. At Wellesley, there are about thirty professors and teachers, all but one of whom are women. At Vassar, there are about thirty professors and teachers, of whom seven are men, the rest women. At the College of Liberal Arts, there are sixteen professors, lecturers, and instructors, all of whom are men. At the "Annex" there are thirty-nine professors, assistant professors, tutors, and instructors, available for service, all of whom are men.

IV. Students' Expenses.

The cost of tuition at Smith and Vassar Colleges is $100 a year. This sum does not include the cost of tuition in music or in art subjects. The cost of tuition at the College of Liberal Arts is $100 a year, and an additional fee of $10 is charged for incidentals.

The cost of tuition at Wellesley is $60 a year. For students in the five-years' musical course, or the five-years' art course, moreover, — and it will be remembered that other students are not permitted to take the extra-collegiate studies included in these courses, — this sum covers the total cost of tuition.

The fee for a full year's instruction at the "Annex" is $200. By a "full year's instruction," moreover, is meant ten hours a week with the instructor for what are called elementary subjects, or eight hours a week for advanced subjects, during the months in which the college is in session.

I may here remark, incidentally, that the regular students of Harvard College are required to spend fifteen or sixteen hours a week with their instructors, and are permitted to spend more hours according to taste and ability. As the students of the "Annex" are considered to have a full course of instruction in the more advanced subjects if they spend eight hours a week with their instructors, and of the more elementary subjects if they spend ten hours, it will be seen that the managers of the "Annex" expect to accomplish a given amount of work with young women in two thirds of the time required for young men. As, moreover, the young women of the "Annex" are examined in the different subjects at the same times and with the same papers as the young men, and as

thus far they have met the required tests with greater average success, it will be seen that the managers expect, and have, up to this time, received only choice students. The "Annex," indeed, as I interpret its plan and management, is not, at any rate at present, prepared to do the work of the ordinary American college. It is arranged to meet the wants of young women of exceptional ability and ambition.

Of the five colleges here considered, only three (Smith, Vassar, and Wellesley) furnish board to students. The cost of board and furnished rooms in the college building, including the expense of heating and lights, is, at Smith College, $250; at Vassar College, $300; and at Wellesley, $190. At Smith and Vassar, domestic work is not required of the students; at Wellesley one hour a day of domestic work is required of every student boarding in the college.

RELATION OF PUBLIC SCHOOLS TO MORALITY AND RELIGION.

BY J. L. PICKARD, LL. D., PRESIDENT IOWA UNIVERSITY.

Two facts are in such general accord with human experience, and so confront human observation, as to challenge denial. They are undisputed because they are indisputable.

The first fact is: Man passes judgment upon the voluntary acts of his fellow-men, more or less decided, in proportion as he becomes personally affected by the acts criticised. The estimate he puts upon the *character* of his neighbor is the average of these judgments. Each man becomes to the mind of the other truthful, generous, upright, honorable, or false, parsimonious, tricky, treacherous, just as his outward acts, which are accepted as the expression of his inner life, interpret him. A line is drawn, upon one or the other side of which each man's judgment places his every acquaintance. This discriminating faculty argues the existence of *the moral sense.* It takes cognizance of morals, either upon the lower plane of man's conduct toward his fellows, or upon the higher plane of man's relation to his God. This first fact restated is: Every man possesses a *moral sense,* and is sure to exercise it, at least in his judgment of others.

The second fact is: All men are subject to *moral influence.* It may reach only the outer act, or it may extend to the inner spring of action. It may affect *manners* alone, or it may extend to *morals.* Both are parts of the same whole: the one the dress, the expression; the other the life, the thing expressed. That man lives not for himself alone is not with him a matter of choice, but of necessity. He is not alone susceptible to influence from others, but he possesses the power to influence others. The unconscious exercise of this power is a fact beyond question. The effort to restrain it but strengthens it. Let a man purposely step aside from the ordinary course of human life, and a peculiar fascination attends him, and increases his influence. In a crowded street one stops absorbed in thought, and gazes abstractedly outward or upward. Many a passer stops and peers into space. Even he who disdains the thought of being under the influence of another hesitates, or in his resolution nervously quickens his pace. His faltering or his hurrying alike betrays him. No man lives who does not owe much of his habits of bodily movement, of phrased speech, to those with whom he has been

in contact. The choice of an occupation is often predetermined by the silent influence of some friend, whose life has spoken though his tongue has been speechless. The character is built of material which has been silently and secretly dropped by the way, as well as of that which has been openly purchased and delivered. Thus in our *manners*, which are the morals of the lower plane, and in our *characters*, which are the morals of the upper plane, we are both objective recipients and subjective factors.

The question is not, *Shall we have any education in morals?* but it is, *What shall be its character?* We cannot destroy our moral influence, but we can determine its character. We cannot shield our children against either the patent or the latent influence of their associates, but we may determine, in some degree at least, the character of those into whose presence they are brought.

Turning now from these considerations, which pertain to our personality, let us think of the organization of such individuals as bearing upon the direction of influence, — the culture of the moral sense. Three prominent organizations seem to have divine sanction, *the home, the church, the state.* These are independent, and at the same time interdependent. Each has its place distinct from the others, but allied in such a manner as to render their severance positively injurious to human interests as presented in God's plans for their advancement. With but one of these organizations is this article concerned, except in this indirect way of allied interests; and with the state only in its educational work have I to deal.

John Stuart Mill defines the province of government, "To increase to the utmost the pleasures and to diminish to the utmost the pains which men derive from each other." Horace Mann has well said "All the powers of the mightiest nation can never prevent bad men from doing wrong. The only way to diminish the amount of wrong in the world is to diminish the number of bad men."

The state is not organized, as some assert, as an immense police force for the detection and punishment of criminals, but it has the higher mission of prevention. A citizen *kept from becoming a bad man* is worth far more than a citizen *reformed.* The demand of the state is for virtuous as well as for intelligent citizens. All occasion for arguing the need of virtue as fundamental to the state is removed by a glance at legislation, from the earliest time to the present day. It takes shape in enactments which foster *homes*, the only soil out of which springs virtuous living; which favor *churches*, designed for the moulding and perfecting of character; which establish *schools*, having for their object the development of a complete manhood. Under-

standing well the necessity of supplementing the work of the inefficient home, of the limited church, of private enterprise beyond the reach of many citizens, the state has undertaken to support at public expense a system of schools suited to her needs, and limited only by the principle underlying her organization. In discussing this subject it is quite popular to say, The state has no right to provide for the support of any other than *secular* institutions. There are still such officers of the church as secular priests. Religious organizations care for temporal interests. They separate these from the distinctively spiritual concerns of the church. Accepting this separation, it by no means follows that all motives to virtuous conduct, to right living, are to be taken out of the one class of duties and assigned solely to the other. Is not a moral life essential to happiness, even though no thought be sent outside the limits of this life, — beyond the confines of this world? Let the state concern herself with the affairs of this life and of this world, — the legitimate sphere of her action. She cannot do otherwise, so far as positive enactments are concerned, without violation of the principle upon which the American state is founded. But without a state church she may, as she does, foster churches within the state, because of their helpfulness in the production of virtuous citizenship, which is essential to the state in her secular capacity. In this fostering of churches, is there any violation of strict adherence to secular functions? Our earliest lawgivers and our wisest statesmen have ever made virtue as prominent as intelligence in the legislation which has looked to the perpetuity of the state. Men filled with sectarian prejudice or partisan bias will assent to nothing which conflicts with their particular views of ecclesiastical or civil polity. They are right. But is there not for varying views a common foundation? Enactments which have stood the test of two centuries and more, and which to-day are accepted by all wise men, bear witness to common ground. The peculiar features of the early educational enactments have reappeared as new States have arisen, and to-day not one is found which ignores the necessity of good moral character as a prerequisite to a teacher's license. The law not alone recognizes the right of the state to demand moral qualifications in the teacher, but it enforces the duty of exercising this right most zealously. But law aside, in determining the qualifications of a teacher of youth there are certain conditions which every man in a civilized community would affix. These may be briefly stated as follows: There must be no disregard of the religious observances of his patrons, such as may appear in critical words, disturbing acts, sneering allusions, or slighting mock-

ery; no want of respect for those who had nurtured him in infancy; no profane words; no uncontrollable temper, endangering the bodily comfort and life of pupils; no unchaste life, nor even its outward symbol, unchaste language; no untruthfulness; no slanderous tongue; no covetous spirit, shown in stealthy acquisition of the property of others. Any one of these forbidden practices would, in the estimation of every reasonable man, be a marked disqualification for the office of teacher. No man lives who would not brand with infamy the authorities who would knowingly place in the teacher's chair one thus disqualified. From so corrupt a fountain no healthy influence could flow. Upon this one point at least all can agree. Will any man recall his verdict of condemnation if upon examination he shall find that all the specifications recited above are but the repetition of the Mosaic law? Are the vices condemned any the less odious because forbidden in the revelation God has made of himself in the Bible? Are the opposite virtues less to be desired because the Bible enforces their practice? Why need we be so particular as to the character of our teachers if that character is to have no weight in the instruction of our children? No extent of intellectual culture, no accomplishment, however dazzling, can atone for the lack of a virtuous life. Recurring to one of the principles stated at the outset, we must admit that it is the real teacher-life which takes hold of the child-life. The outer adornment opens the channel to the child's soul. It is quite certain that he who so persistently urges the possession of a good moral character as requisite to the teacher, will not forbid its silent influence at least upon the taught. But let us consider for a moment the particular manifestations of this life in the teacher. He will impress the importance of the work of the school-room by his own devotion to the work. Under the influence of his spirit of whole-hearted devotion the pupil's work assumes vast importance. It cannot be neglected nor indifferently done without violence to his moral sense. The spirit of work pervades the place, and the best effort of the teacher insures a corresponding effort on the part of his pupil. Obedience to law is another element of a virtuous life. He is best fitted to command who has learned to obey. The requirements of the school are as essential to the teacher as to the pupil. A regular programme faithfully followed; scrupulous attention to habits of punctuality, of neatness of person and attire, of care of desk or table; quiet and courteous demeanor; recognition of the rights of others, even if they be inferiors; respect for those in authority, shown in language and in deportment, — these all determine the extent of a teacher's

influence, and serve as a true index to his character; these far outweigh his words of caution or reproof. If the former be required, shall the latter be refused?

Again, it is not within the range of possibility for a teacher, who indulges in practices that need concealment or apology, or explanation even, to elude the watchful eye of some or all of his pupils. No promise, however trivial it may seem to the teacher, is such to the child. A forgotten promise, a hasty word, a wrong judgment, are possible to human error; but known and not confessed, they leave a stain upon the child's character, or they create distrust which hardens the mind against better impressions. An apology to a child gives the heart of the child to the teacher, and makes certain a more considerate conduct on his part toward his fellows. Not to take up more time with details, devotion to duty, obedience to law, consistency of conduct, and an unselfish seeking of the general good are certainly essentials of citizenship, and should be prominent in our schools if we would have them appear in the nation's life. Thus far in this discussion I have brought forward only what legislation has enforced by its sanctions; legislation which has stood the test of practical experiment, under the scrutiny of men of all shades of religious belief and of political preferences. I have adduced but one channel through which compliance with legislative requirements may be obtained, the channel of silent influence of the teacher. Thus far we are permitted to go without a word of dissent. Denied this channel, the public school has no right to exist, nay, cannot exist; for it is not within the bounds of possibility to select a living teacher who has not this power of silent, unconscious influence. And if the power be not exercised in the direction of virtuous character, it has no right to toleration; for character is of far more value to American citizenship than mere brain culture, even if this last were possible to the exclusion of all else. A mental giant destitute of moral principle becomes the bane of the state. His power to do evil, unrestrained by his own convictions of right, is exercised to the subversion of the state, or to its prostitution to the service of his own base ends. The state must, for her own preservation, see to it that her legislation, designed to secure the influence of a virtuous life in the teacher, fails not of its purpose. No state is so suicidal in her acts as to demand a virtuous teacher, and then forbid the exercise of the influence sought. But there are other silent factors in the building of character; they are the books read by the child. The ability to read, cultivated properly in the public school, arouses the thirst for acquisition by reading. To sate this thirst, resort is had to the near-

est springs. These are often poisoned springs. The child may not detect them in his thirst. Shall the teacher be denied the right of caution, of positive advice even, when he knows the danger before the pupil? The state orders the purchase of libraries. Stringent laws are passed and enforced against the publication and sale of obscene literature. Many books not under the ban of the law are corrupt in their tendency, and their general reading is sapping the morals of society, and endangering the safety of the state. The right of caution and of advice will be denied the teacher by no true friend of the state.

So, too, in the choice of associates whose influence will help powerfully to form the character of the child, shall all positive precepts be denied which are in accord with the life required? One step further, upon which there may not be the same unanimity of sentiment: The legal requirements as to qualifications of teachers develop the purpose of the state in their enactment. That purpose is that the character so zealously enjoined shall have influence over the lives of pupils, otherwise the requirements are the merest folly. To this end of the fullest influence, no restraint should be put upon the teacher's use of means which will best secure the successful accomplishment of the purpose sought by the state. With a Christian teacher (and our public schools are to-day largely in the hands of such), the Bible serves as a potent means of increasing moral influences. Myself a firm believer in the authority of the sacred Scriptures, I follow what I believe to be their teachings when I say that they address themselves to the consciences of men, *winning*, not *forcing* their acceptance. *Requirement* of their use is hardly in consonance with their spirit, and their *prohibition* is in the highest degree illiberal and sectarian. The teacher is under obligations to exert the highest moral influence of which he is capable. State laws enforce this obligation. In meeting it the teacher should be left free to act, within the limits of regard to the rights of others. No book contains better maxims; no code of morals more pertinent precepts: and the use of the Bible should not be prohibited to any discreet teacher.

Religion is but the expression of a universal acknowledgment of dependence upon a power outside of, and almost universally higher than ourselves. This idea of dependence enforces certain obligations. These obligations may, nay, *must* be impressed, or violence is done to our natures. Instruction in duties to our God and to our fellows should never degenerate into the inculcation of opinions as to minor and non-essential points of belief or polity. No one questions

the right of the state to enforce the positive inculcation of the duty of patriotism, nor is this duty the less pressing because he who is to enforce it may have certain views upon civil polity which may make him a partisan in his own acts. What patriotism is to partisanship, religion is to sectarianism. Each is the whole, in its spirit and essence, universally received, while the form may vary with the varying mood of the individual.

The genius of our government forbids only the spirit of the proselyte, the trade of the partisan. It favors the life of the patriot, the influence of the man who goes forth full of the catholic spirit of that religion which is drawn from the Bible.

"The worst education which teaches simplicity and self-denial is better than the best which teaches all else but this."

TEACHING ENGLISH.

BY PRESIDENT A. B. STARK, RUSSELLVILLE, KY.

THE growing interest in the study of the English language and its literature, in the schools of Great Britain and the United States, marks an epoch in the history of education. The friends of the new study, when disposed to complain that it does not receive proper recognition and encouragement in the older universities and colleges of the two countries, may find, in a comparison of its present state with that of twenty-five years ago, abundant reasons to hope for a full realization of their wishes. All thinking educators are now agreed in the opinion that the knowledge of most worth to every one is a knowledge of his mother tongue; and when one's mother tongue is English, the noblest language in "the foremost files of time," embodying the richest, purest literature in the world, neglect of it is the supremest folly, while earnest study of it will bring the highest reward in useful knowledge, moral training, and intellectual power.

After acknowledging all that has been done for the encouragement of this study, there is good ground for complaining of its neglect in the older colleges and universities. If I am rightly informed, a knowledge of English counts for nothing in securing honors at Oxford and Cambridge. Hence, every hour given to the study of English diminishes a man's chances of success in winning a scholarship or a fellowship that is given as a reward for superior attainments in mathematics and classics. I was not surprised, therefore, when told by Prof. Skeat, at Cambridge, that nearly all the students who take English at the Cambridge local examinations are women. A man going into a hotly contested race for a scholarship or a fellowship cannot afford to weight himself with an unprofitable study. I have heard English scholars of widest fame complain that work at English does not pay in England. In the United States, a man having a special knowledge of English may turn it to good account in the work of a college professor. But in many colleges where good salaries are paid, the chairs of English are filled by men whose knowledge of the subject is very limited and superficial. It is, however, to be hoped that in a few years all such places will be occupied by specialists.

What is now most needed for the furtherance of this study is a right method. Writers on educational methods differ widely in their opinions, while each practical teacher has a method of his own

and laughs at all others. These discordant views and practices must be harmonized by calm, earnest discussion. To aid in the effort to discover the true method is the purpose of this paper.

The method will depend mainly upon the object that the teacher has in view. I say *mainly*, because practical knowledge of the language, the ability to speak and write it with correctness and force, the one object which all teachers agree in placing first, is sought by very different methods. There are among us still those who believe that this power of using the English language correctly may be acquired by memorizing the rules of a grammar, constructed upon the model of a Latin grammar, and by the thought-killing, treadmill drudgery of parsing. In the higher education, where the object is a scientific knowledge of the language, the historic and comparative method will be followed by every competent teacher;* for other methods lead no whither, except into error and confusion. The primary object of other teachers is to lead the pupil along "the primrose path" of pleasure to an acquaintance with English literature. The old method of studying English literature, still followed in many schools, sets the pupil to the dreary task of memorizing names, dates, facts, and the opinions of others about English literature, without giving him the privilege of taking a single draught from the sweet stream of English thought. Others go to the opposite extreme and exclude all serious study; they will have but a holiday ramble in the woods and the fields, gathering flowers and listening to singing birds. Others again would use English literature as a mere practice-ground for performing feats of philological legerdemain. These teachers send the student to the rich feast of English poetry and philosophy for the purpose of stealing the dry bones, — worse than the one who went to "a feast of languages and stole the scraps."

The wise teacher wants a method by which he may attain all worthy objects in harmonious combination. The language and the literature must be studied together, each in the other, and the proper objects of the combined study are: 1st, for all classes of students, a practical knowledge of the language, giving the power to speak and write it with correctness, and with more or less elegance and force; 2d, a thorough acquaintance with a few masterpieces of English literature, embracing as great a number of books and authors as the student can find time for; 3d, a knowledge of the history of English literature as an embodiment of the highest thought, the intellectual life, and the accumulated experiences of our race; 4th, a scientific knowledge of

* See my paper on "The Place of English in the Higher Education," read before the National Educational Association, 1877. Proceedings, page 27, 28.

the language, to be acquired by the historic and comparative method. It hardly needs to be said that a course of study by which these knowledges may be acquired will be productive of the best educational results in the awakening, developing, and strengthening of the intellectual and moral powers.

The object of prime importance is the acquisition of the power to use the mother tongue correctly. Language is learned, not by rules, but by imitation. The child that never hears anything but good English spoken will be sure to speak good English without any instruction, and will need only judicious exercises to increase his skill in the use of the language; but most of the pupils in our schools hear only bad English at home. They must, therefore, correct bad habits and acquire right usage by conscious effort under instruction. This instruction is best given in connection with the study of some piece of literature, which may serve as a model of right use of the language, for unconscious imitation. Hence, as the language is to be learned by studying its literature, the whole interest of our discussion centres in the question, How shall we teach English literature?

As said already, the learning of English literature does not consist in reading historical manuals, and in cramming the mind with opinions *about* books and authors. Such study, as a source of useful knowledge, is a delusion; as a means of mental drill it is unwholesome, and productive of mental dyspepsia. To use a volume of extracts is just a little better. Whatever is worth studying at all is worth studying as a whole. He who limits himself to the study of extracts and fragments of the masterpieces is doomed to go through life clothed in the beggarly shreds of learning, while thinking himself in full dress. It is far better to have a thorough knowledge of a few great books than to have a superficial knowledge of many books.

Shakespeare, as the foremost name in all literature, must take the leading place in any wisely planned course in English literature. The different methods of teaching are well exemplified by the different plans on which three well-known school editions of Shakespeare are edited. Our subject will be best presented and illustrated by an examination of the work of these editors.

Mr. H. N. Hudson, professor of Shakespeare in Boston University, is widely known as a wise, acute, living critic of the poet. His position in the educational world is certainly unique,—the only *professor* of Shakespeare that "has ever lived in the tide of times." His method of teaching Shakespeare, fully exemplified in his editorial work, he has set forth in an elaborate essay published in several

volumes of his school edition. He would exclude all secondary or incidental purposes, and study literature simply as literature. The language of a play of Shakespeare must be studied only so far as the study may be helpful in understanding the thought of the poet, and must never be used as a basis of lessons in grammar, analysis, philology, logic, or rhetoric. He sneers at Shakespeare grammars and lexicons. Beyond the briefest definitions of hard words, and the shortest explanations of difficult passages, his notes and criticisms are all æsthetic, — discussions of the motives, the purposes, and the characters of the play. For the pupil there is no task-work, no unpleasant exercise; he is not even required to read over the lesson of the day before coming to the class-room. He is left to bask in the sunshine of the poet's thought, and to grow by the unconscious absorption of "sweetness and light." Unconscious growth is certainly a good thing, an excellent good thing, and goes on in a degree in the minds of those who read only what pleases them; but growth in its healthiest forms may be hastened and promoted by conscious effort, by hard, persistent study, that may sometimes be a weariness to the flesh. Even in the study of literature the gods give always the richest gifts to those who labor for them. With most pupils under Prof. Hudson's system, the results will be not only unconscious and invisible, but unreal and non-existent.

The editors of the excellent Clarendon Press series go to the other extreme. They deal exclusively with the framework of the play: with the mere setting of the poet's thought. On all points of bibliography, history, grammar, and philology, their introductions and notes are full and scholarly, worthy of all commendation, and indispensable to every teacher of English. They fall short of the perfect method only by rejecting all æsthetic or character criticism, which they stigmatize as "sign-post criticism." I fail to see any special fitness in the designation. It would be just as appropriate to sneer at notes of all kinds as sign-posts. They would give the traveller full instructions about the way to Westminster Abbey and how to enter it, and there leave him, without guide or guide-book, to grope his way as best he can. But every visitor wants a guide at first, to point out objects and places of chief interest; then he wishes to visit the grand old Abbey again and again alone, and drink in silently its holy influences and inspirations, until his soul becomes luminous and transfigured in the presence of England's greatest spirits. The sign-post is most needed where the way is hardest to find. The sign-post is an impertinence only when it gives no useful information, or when it is so conspicuous and pretentious that it claims attention on its

own account; but when, as Prof. Dowden well says, "Coleridge or Lamb or Hazlitt or Mr. Ruskin or Mr. Arnold erects a sign-post, it is only a very wise or a very foolish person who neglects to look at its pointing. The truth is, that our feelings are quite as capable of education as our intellects: there are masters in things of the feelings as there are masters in things of the intellect; and we need not follow the masters in either direction in blindness or servility." Dr. Arnold complains of the ineffably stupid way in which a boy will read the finest passages in Homer and Virgil, and see no beauty in them. The truth is, that an unimaginative boy or girl, of uncultivated taste, is never in greater need of wise guidance and help than in the effort to discover the deeper thoughts and finer, quieter beauties of a great poem. They have eyes, but see not.

The complete method will put the student into perfect possession of the play, and enable him to see all that the author saw, and as he saw it. This true method is found in a skilful combination of all the good points in the two methods just described. Mr. Rolfe has done this with good success in his edition of Shakespeare.

It is the method I have followed for many years in my own teaching. The editing of the books in the Clarendon Press series is so good, so accurate, so full, and so scholarly, that I use them in most classes, and endeavor to supply their deficiency in æsthetic and character criticism by matter of my own, in the form of hints and questions which the students are set to work out in detail. My pupils do not confine their attention to one view of the work selected for study, but look at it from every side, as a whole, and in all its parts. After one or two readings of the book, for the purpose of getting a general knowledge of its scope, the meaning of all the hard words is carefully studied, with an exact noting of all peculiar uses and of all changes of meaning. All irregularities and peculiarities of grammatical forms and constructions are discussed, explained, and classified. Any word, form, or idiom that illustrates or suggests a law or principle of philology is used for that purpose. All obscure sentences are carefully analyzed and explained. All historical, biographical, and mythological allusions are so fully traced out that their full force and value are understood. All rhetorical figures and illustrations are critically examined. All allusions to the manners, customs, persons, and events of the author's time are fully investigated.

After all this minute work upon the body of the poem, the student is prepared to hold communion with its spirit, and "to pluck out the heart of its mystery." There are many degrees of success in this task, according to the measure in which the pupil is endowed with

"the vision and faculty divine." But even the dullest mind admits some gleam of light, and is enraptured with some glimpse of beauty; while, upon the principle that "to him that hath shall be given," the richly endowed mind carries off untold treasures. This minute, long-continued study of a play gives time for the mind of the student to feed upon, digest, and incorporate into itself the poet's best thoughts and finest beauties.

It is through hurried and superficial study, through failure to dwell long enough, earnestly and lovingly, upon a few masterpieces, that most teaching of English literature becomes unfruitful, "stale and unprofitable." In view of this failure, many educators insist upon the necessity of carrying our children back to Homer and Virgil for inspiration and æsthetic culture. The great Dr. Arnold thinks it would be a rare "treat to teach Shakespeare to a good class of young Greeks in regenerate Athens; to dwell upon him, line by line and word by word, in the way that nothing but a translation lesson ever will enable one to do; and so to get all his pictures and thoughts leisurely into one's mind, till I verily think one would, after a time, almost give out light in the dark, after having been steeped, as it were, in an atmosphere of brilliance. And how could this ever be done without the process of construing, as the gross medium through which alone all the beauty can be transmitted, because else we travel too fast, and more than half of it escapes us?" I think the great teacher mistakes. The grand results he seeks may be attained by my method of slow, prolonged, minute study of a play. Under wise teaching, a class of English-speaking boys or girls will get more good out of a play of Shakespeare than would a "class of young Greeks in regenerate Athens." The young Greek, unless he is exceptionally bright, would stick in the language of Shakespeare, as the young American sticks in the language of Homer, and get no glintings of his deeper thought.

Experience has proved, beyond all question, that pupils of average intellect will pursue all these details with unabated enthusiasm and unflagging interest. They will work at a play of Shakespeare until they are in such perfect possession of it that they are prepared to answer readily, orally or in writing, every possible question, whether bibliographical, historical, grammatical, philological, or æsthetic. It is easy enough to laugh at a school-girl's effort to discuss such a question as Hamlet's insanity, for instance, as an ex-president of the English Philological Society does in commenting upon certain work done in Logan Female College; yet it must be admitted that the training which enables the girl to present all the arguments on both

sides of the question in a clear, orderly way, in a limited time, without the use of any book except the text of the play, and to draw an intelligent conclusion from a calm, independent weighing of the arguments, attains one of the highest aims of education. No process of mere cramming could ever produce such results. Such work is the outcome, at once the evidence and the fruit, of true culture.

In connection with these studies, the student should acquire readiness and skill in the art of expression by a constant drill in a great variety of writing exercises, paraphrases, outlines, plots, critical essays upon the characters, discussions of doubtful passages, written reviews of oral lessons, and finally written examinations, embracing the whole scope of study. The skilful teacher, to avoid routine, will vary these exercises in many ways.

A full course in English language and literature must include both poets and prose writers of every period, beginning with Cædmon and Alfred, and coming down through twelve centuries to Tennyson and Carlyle. In practice, however, it is better to begin with the authors nearest us, as being more easily understood by the young, untrained pupil, and work back to the older authors, that are more difficult because their language differs so much from modern English. The best writers of English prose belong to this century, and ought to be studied early in the course as models upon which the student may form his own style.

It was my purpose to say something about Prof. Bain's method of teaching English as given in his "Education as a Science." He would have the attention of the student concentrated upon the language and the style, to the rigid exclusion of all other considerations. But I have already given my reasons for following a very different method, and need not discuss the subject further.

THE BOSTON LATIN SCHOOL.

As the Latin School of Boston is one of the most conspicuous outgrowths of the common-school system, and in some respects the ripest fruit of the seed sown nearly two and a half centuries since, it may be worth while briefly to recall the events connected with the establishment of this well-known institution of learning.

Among other proceedings of "a generall meeting upon publique notice," held "13th of ye 2d moneth [April], 1635," we find the following duly recorded: "Likewise it is genrally agreed vpon yt or brother Philemon Pormort" (sometimes spelled Portmorte) "shal be intreated to become schulemaster for the teaching and nourtering of children wth us." For his support, a tract of land of thirty acres at "Muddy River" (supposed to be a part of Brookline) was allotted. Other grants of land were subsequently made for the maintenance of a "Free Schoole for the Towne." An income also was derived from the letting of "Deare Island" of £7 per annum, for three years, 1644–47, which was appropriated to the support of the school. On the expiration of the lease in 1647, it was renewed for seven years at £14 per annum, and the next year was extended to twenty years at the same rent. It appears, moreover, that before the expiration of the twenty years — *i. e.*, in the year 1662 — the island was leased to Sir Thomas Temple, Knight and "Barronnight," for thirty-one years at a rent of £14 a year, "for the use of the 'Free Schoole.'"

The immediate successors of Mr. Pormort were Daniel Maude, John Woodbridge, and Robert Woodmansey. With reference to the last-named, we find this record in 1650: "It is also agreed that Mr. Woodmansey, ye schulemaster shall have fiftye pounds p. ann. for his Teach' ye schollars, and his proportion to be made up by ratte," *i. e.*, rate. How jealously the selectmen guarded the interests of this "Free Schoole," which, as late as 1656, appears to have been the only school in the town, is evident from the following incident: It seems that that ubiquitous individual, "Mr. Jones," had ventured to open a school on his own account; such an institution as we now dignify with the name of "a private, select school." The worthy magistrates of the town looked with no favor on this undertaking, and had obtained a promise from the adventurous pedagogue that he would at the close of his winter term give up his school and "move on," as Inspector Bucket, in Dickens's "Bleak House," orders poor "Jo" to do; and to cut off all occasion for complaint that they had not made sufficiently ample provision to meet the intellectual wants of

the rising generation of Boston, the town "agreed with Mr. Dannell Hincheman for £40 per an. to assist Mr. Woodmansey in the Grammar Schoole and teach Children to wright, the yeare to begine the 4th of March $\frac{65}{6}$." Soon after this appointment, Mr. Jones was sent for by the selectmen, "for keeping a Schoole, and required to perform his promise to the Towne in the Winter, to remove himselfe and familye in the Springe, and forbiden to keep Schoole any longer." Whither poor Mr. Jones betook himself, after this somewhat peremptory order, we have no means of knowing. We should not wonder, however, if he went to Rhode Island, where he would be sure to find a sympathizing friend in Roger Williams.

The next principal of the "Free Schoole" was Mr. Benjamin Thompson, whose term of service was of but two or three years' duration. His successor was the celebrated Ezekiel Cheever; "Master Cheever," as he is called in the early history of Boston. He was born in London, Jan. 25, 1615, and came to America in 1637. He was an instructor in New Haven for twelve years. In 1650, he went to Ipswich, where he resided eleven years. From Ipswich he removed to Charlestown, where he taught nine years. In December, 1670, he was called to take charge of the "Free Schoole"; the dignitaries of the town, including the governor and colonial magistrates, the clergymen and selectmen of Boston, all uniting in the invitation. For thirty-eight years he discharged the duties of his office, and died Aug. 21, 1708, having deservedly acquired an honorable reputation, which places him in the front rank of Boston teachers. He was "venerable," says Governor Hutchinson, as quoted by Drake, "not merely for his great age, ninety-four, but for having been the schoolmaster of most of the principal gentlemen in Boston, who were then upon the stage. He is not the only master," adds the governor, "who kept his lamp longer lighted than otherwise it would have been, by a supply of oil from his scholars."

Under date of June 25, 1702, appears the following record: "Mr. Nathaniel Williams to have £80 for the year ensuing, as an assistant to Ezekiel Cheever, in governing and instructing the youth at the Latin School." Upon the decease of Mr. Cheever, Mr. Williams was appointed his successor. Previous to this he had been ordained as an evangelist to labor in one of the West India Islands, and had commenced his work at the station to which he had been assigned. The climate, however, was found to be so enervating that he broke down in health, and returned to Boston. Besides being a preacher, he studied medicine, and had an extensive practice in his profession. His connection with the school, as assistant and principal, was from

1703 to 1734. He lived a few years after retiring from his work, and died Jan. 10, 1738.

One of the ushers of the school, for some time previous to the resignation of Mr. Williams, was John Lovell. "Master Lovell" may be said to have been one of the "institutions" of Boston. For four years he was the assistant master, and for forty-two years the head-master of the Latin School. A part of this period was a time of the most exciting character, embracing as it did the years which immediately preceded the Revolutionary War. Not a few of the men who were prominent in those times had been the pupils of "Master Lovell," and had been subjected to his rigid discipline as an instructor. In this discipline he is said to have been rough and severe. His portrait may be seen in the Harvard Memorial Hall, "drawn," says Judge Cranch, as quoted by Mr. Jenks, in his sketch of the Boston Latin School, "by his pupil Smibert, while the terrific impressions of the pedagogue were yet vibrating on his nerves. I found it so perfect a likeness of my old neighbor that I did not wonder when my young friend told me, 'A sudden, undesigned glance at it made me shudder.'" Lovell was a bitter Tory, and did not hesitate to give expression to his sentiments in his school. It is not unlikely that views advanced by a teacher not especially beloved by his pupils may have been looked upon with disdain because they were enforced by lips which too often indulged in words of censure and fault-finding. An antidote, however, to the royalist poison was found in the teachings and influence of his assistant and son James, who was as strong a Whig as his father was Tory. We are told that "the two masters occupied desks at the opposite ends of the room"; and a pupil of a later day pictures them as "pouring into infant minds as they could, from the classics of the empire or the historians of the republic, the lessons of absolutism or of liberalism." That one of these pupils caught his inspiration from the so-called "rebel" James is plain from the following incident, which is related of Harrison Gray Otis: "Coming to school April 19, 1775, he found his way stopped by Percy's brigade drawn up across the head of School Street, in preparation for their march to Lexington. He had to pass down Court Street and come up School, and just entered the room to hear Master Lovell dismiss the boys: 'War's begun and school's done: *Deponite libros.*'" Upon the evacuation of Boston by the British, "Master Lovell" went to Halifax, where he died.

For a few months after Mr. Lovell left Boston the school was closed. In June, 1776, it was reopened, under the charge of Samuel Hunt, a graduate of Harvard, and, for some time, at the head of the

"North Grammar School." He continued in office thirty years, resigning in 1805. His ideas of school discipline he seems to have taken from his predecessor, and he was not unfrequently "in hot water" with the parents of his pupils and with the school committee. It ought, however, in justice to be said that in those times, more than in these, the relation of teacher and pupil was quite apt to be one of antagonism. One of his scholars in mature life, in looking back to the experience of his school days, says, "I am desirous to do credit to Master Hunt, of whom, since I arrived at years of discretion, I have always thought well. I think his pupils did not do him justice, and that some occasional follies of passion were remembered by them, while many excellent daily services, performed with a good spirit and honest purpose, were overlooked." On his resignation in 1805 a pension was allowed him. He did not remain long in Boston, but took up his residence in Watertown. Here he lived for some time, and then removed to Kentucky, where he died.

From the sketch of Mr. Jenks, to which the writer is indebted for many of the facts embodied in this article, we gather a good idea of the ordinary life and spirit of the Latin School during the period which has just been reviewed. The school, we are told, "was divided into several classes, each of which had a separate bench or form. In Lovell's time the boys sat on these at first in the order in which they came to his house for examination. The books used the first year were 'Cheever's Accidence,' 'Nomenclatura Brevis,' and 'Corderius's Colloquies'; the second year, 'Æsop's Fables,' and toward the close 'Eutropius' and 'Ward's Lilly's Grammar'; the third year, in addition, a book called 'Clark's Introduction'; in the fourth year, the fourth form, as well as the fifth and sixth, being furnished with desks, commenced 'making Latin,' and took 'Cæsar's Commentaries.' After this the three upper classes read 'Tully's Orations,' the first books of the 'Æneid,' and dipped into 'Xeno phon' and 'Homer.'" This continued to be substantially the order pursued under the administration of Master Hunt. We are further told that "School began in the morning at seven in summer and eight in winter, and in the afternoon at one throughout the year. It ended at eleven in the morning and five in the afternoon, and then the greater part went to writing-school for an hour. On Thursday school broke up at ten A. M., to give opportunity to attend the 'Thursday lecture.' School opened with *Attendamus* to a short prayer; it ended with *Deponite libros.*"

The traditionary severity of discipline was kept up by the successor of Master Hunt, William Bigelow, who had been called from Salem

GENERAL LIBRARY UNIVERSITY OF MICHIGAN

to take charge of the school. He was in office about eight years, 1805–13. His administration being attended with many difficulties, he resigned in 1813. The committee, now anxious both to restore confidence in the school and try the effect of a different kind of rule, selected as the head-master a young man with little or no experience as a teacher, one not committed to any favorite plan or rules for the government of such a school as the Boston Latin School. The methods of Mr. Benjamin Apthorp Gould (at the time of his election, a member of the Senior class at Harvard College) were, in many respects, just the opposite of his immediate predecessors. He sought to break down the barriers which hitherto had existed between teacher and pupil, and make his scholars feel that he was their personal friend. Like that prince of instructors, Dr. Thomas Arnold, he appealed to the manly and generous side of the nature of his scholars, inspiring their confidence and winning their affection, while he commanded their respect in the enforcement of salutary rules, the justice and propriety of which they could not themselves help acknowledging. Mr. Gould held his position some fifteen years, 1813–28, when he resigned.

The successor of Mr. Gould was his assistant, Frederic P. Leverett. He is best known as the author of the Latin lexicon which was so extensively used in our advanced schools, forty or fifty years since. He remained in office three years, 1828–31, when he resigned to take charge of a private school. For four years previous to the years of Mr. Leverett's resignation, Mr. Charles K. Dillaway, a graduate of Harvard College in the class of 1825, had been the sub-master. He was now chosen master of the school, and was in office five years, 1831–36, when he resigned, and Mr. Leverett was reappointed, and accepted; but before the time had arrived for commencing his duties, he died.

Mr. Epes Sargent Dixwell, a graduate of Harvard College in the class of 1827, and sub-master of the school for a year and nine months, was appointed to fill the place made vacant by the decease of Mr. Leverett. He remained in office till 1851; he then resigned and established a private school in Boston.

The successor of Mr. Dixwell was Francis Gardner, himself a pupil of the Latin School, and a graduate of Harvard College in the class of 1831. He was connected with the department of instruction from the time of his graduation to the day of his death, during all this long period being absent from the city only one year, which he passed abroad. Referring to this long term of service, Prof. William R. Dimmock says, "This was the uneventful life of Dr. Gardner: his

daily course in and out of the same house for more than thirty years, at the same school for forty-three years, the regular hours, till age began, at the gymnasium, and early in his life the daily walk to Roxbury Neck; the only relaxation looking in at the bookstores in search of something that he might use in his work, and at one period of his life, groping among the piles of books at the Public Library: a simple, quiet life, that many men might pass and yet leave nothing distinctive in their record. . . . The great object that he aimed at in his instructions was that the boys in their classical work should learn Latin and Greek, and not merely to translate certain selections from the languages. . . . He had a certain grim humor, and an odd quaintness of expression, that were very effective in his dealings with the boys, and often very amusing as they were repeated and passed through the school."

It was the fortune of the writer of this article to be a member of the Boston School Committee for eight years, 1856–63. These years were embraced within the period of Mr. Gardner's administration, and it may be a matter of interest to note a few things that were said with reference to the school during this period. In the annual report for 1857, the special report on the Boston Latin School was presented by the chairman of its committee, the late Dr. N. B. Shurtleff, who, among other things, says: "From its establishment down to the present time, the principal object of the school has been to prepare young men for college, and for mercantile and other high pursuits of life, and in this it has been remarkably successful, as an examination of its catalogue of graduates will show; for among the names to be found enrolled among the alumni of the school are some of the most brilliant scholars and distinguished men which Boston has ever produced." Alluding to the interest which the "Latin School Association" have taken in their Alma Mater, Dr. Shurtleff says that to it "the institution is indebted for one of the choicest collections of classical books in the country. The books consist, not only of the most desirable editions of the ancient classics, but of rare works of reference. They are for the free use of all persons connected with the school, and have proved of much value and utility." The chairman has his word of commendation of the principal: "Mr. Francis Gardner, the present accomplished principal of the school, has occupied the position of master, and those of a more subordinate character, for many years, much to the benefit of this school, and has had no small share in raising it to its present high standard, and continuing to it its high reputation for thorough elementary drill."

In the annual report for 1857–58, Dr. Shurtleff again speaks words

of high commendation of the head-master of the Latin School: "Since the accession of the present distinguished head of the school, the average number of pupils admitted to college has largely increased, and is twenty per cent greater than that of any of his predecessors." Already the pressing wants of the school for more and better accommodations are recognized, and the committee express themselves as "desirous that measures may be taken for the proper enlargement of the accommodations, either by the addition of another story to the building, or by some other judicious provision." Dr. Shurtleff closes his report by saying that "the school continues in its usual high reputation of excellence, fully sustaining the reputation which it has acquired at home and abroad, and coming fully up to the expectations and wishes of this community, for whom it was established and by whom it is so liberally sustained."

In the annual report of the School Committee for 1858–59, which the writer had the honor to prepare, the chairman of the Latin School Committee, John Codman, thus speaks of Mr. Gardner: "Constant observation has convinced the committee of the eminent fitness of the head-master, Francis Gardner, Esq., for the place which he holds. His ability is unquestioned, his zeal and fidelity are untiring, The results produced at this school show the success of his system. for we have high authority for averring that the Boston Latin School is looked upon at Cambridge as one of the most reliable sources for the supply of good scholars to the University."

In the report for 1859–60, the chairman of the Latin School, George W. Tuxbury, remarks, "The Boston Latin School has for a long time been considered, both at home and by many distinguished educators from abroad, who have given attention to the public-school system of this country, as justly entitled to be ranked among the very first of those institutions which are designed to prepare youths for college; and the committee believe that it has at no former time maintained a higher standard of excellence than during the year which has just now closed." Mr. Tuxbury follows in the footsteps of his predecessors in his estimate of the abilities of the principal of the school: "Mr. Francis Gardner has for many years heen connected with the school, either as assistant teacher or principal, and his thorough scholarship and industry have done much to place and keep the school in its present high position."

To one other report only do we allude, that of 1860–61. Again Dr. Shurtleff — than whom no other citizen of Boston took a deeper interest in the prosperity of its public schools — is chairman of the Latin School Committee. His well-known love for statistics exhibits

itself in his report. He gives us a table, covering a period of ten years, 1852–61, from which it appears that during this period one hundred and sixty-eight boys have been fitted for college at the Latin School, one hundred and forty-four of whom entered Harvard College. A *résumé* of the history of the school is presented, commencing with the famous vote passed by the townsmen of Boston, April 13, 1635. Some interesting facts are stated about the location of the different school-houses of the school: "The exact position of the first school-house is not known: but it is matter of record that just ten years after the first employment of Mr. Pormort, the town purchased of Mr. Thomas Scottow his dwelling-house and yard, which at this time (the 31st of March, A. D. 1645) was situated on the very lot upon a part of which the City Hall now stands; and that in the October following, the constables of the town were ordered to set off six shillings of the rate of Mr. Henry Messenger, the northerly abutter, 'for mending the schoolm^{r} his p^{t} of the partition fence between their gardens.' On this spot stood the first school-house in Boston of which we have any positive knowledge; edging westerly upon the burial-ground, and fronting southerly upon the street which obtained its designation, School Lane, from this fact. As time wore on, the old school-house, which had served not only as a place for nurturing the youth of the town, but also for the indwelling of the master and his family, fell into decay; and in order to make room for an enlargement of the neighboring chapel, it was taken down in 1748, and another building was erected on the opposite side of the street." Mr. Jenks tells us that "'Master Lovell' opposed the removal; but the town agreed to it in a tumultuous meeting (April 18, 1748), by two hundred and five yeas to one hundred and ninety-seven nays. In the afternoon of the same day this epigram was sent to Mr. Lovell: —

> "'A fig for your learning! I tell you the Town,
> To make the *Church* larger, must pull the School down.
> Unluckily spoken, replied Master Birch, —
> Then *learning*, I fear, stops the growth of the *Church*.'"

Dr. Shurtleff continues his sketch: "In course of time, also, this building yielded to the effects of age and inadequacy, and was renewed about the year 1812," — on the site of the Parker House. "Up to this time the building was designated as the Centre School-house, after which time it was properly called the Latin School-house." This building gave place to the one on Bedford Street, erected in the years 1843–44. Once more Dr. Shurtleff alludes to "Mr. Francis Gardner, the well-known scholar, who has held the

position of master for the last ten years, and to whom is due, in no small degree, the reputation which the institution has acquired for its high standard of excellence." He alludes also to Mr. Edward H. Magill, the sub-master, now president of Swathmore College, an institution of the Friends, near Philadelphia, "who has exhibited great efficiency in his present position, and met with distinguished success."

In closing what we have to say respecting Mr. Gardner, we cannot do better than employ the language of Henry S. Washburn, chairman of the Latin School Committee, in his report for 1875–76 : "In the early days of 1876, Francis Gardner, head-master for nearly twenty-five years, closed a long and honorable life. Himself a graduate of the school, he had, during a period of forty-five years, labored for it as usher, sub-master, and head-master. Many generations of his pupils bear grateful witness to his faithful efforts in their behalf, to his extended and accurate scholarship, and his self-sacrificing devotion to the interests of the school. It will not be easy to find, for the place which he leaves, a successor as highly trained and equally single-hearted in the performance of every duty."

The successor of Mr. Gardner was Augustine Milton Gay, who was a graduate of Amherst College in the class of 1850, and for some time had been a master of the school. He was appointed in June, 1876. He was able to perform but little service in consequence of ill health. He died suddenly in November of this year.

The school was for several months under the charge of Moses Merrill, a graduate of Harvard College in the class of 1856, who was appointed head-master in June, 1877. Mr. Merrill's connection with the school, in the department of instruction, dates from 1858, at which time he was appointed an usher. It will suffice to say that under the present administration, the high standard which the Boston Latin School has maintained for so many years is kept up.

Reference has been made to the erection from time to time of new school-houses to meet the urgent wants of the Latin School. It was located in School Street from 1645 to 1844, a little over two centuries. During this period, it had in this street three homes, the first being directly in the rear of King's Chapel. This building, if we may rely upon the correctness of the picture which is given of it, was of the simplest architectural construction, two stories in height, and probably occupied in part by the schoolmaster and his family. It was placed several feet beyond the line of the street, its west end being directly behind the chancel of King's Chapel. For more than one hundred years this humble building was the headquarters of the

highest, most advanced school in Boston. Although, as it appears, "Master Lovell" opposed its demolition, it had to give way before that "march of improvement" for which Boston has always been celebrated, and in 1748 another building was reared on the spot where now stands the Parker House. It is said to have been "A low building, with an attic, and with a cupola above." No picture of it, so far as is known, has been preserved. For sixty-four years, 1748–1812, it faithfully "served its day and generation," when it was torn down, with the exception of a part of the westerly wall, and a new edifice erected in its place. This building was occupied one half as long as its predecessor, *i. e.*, thirty-two years, 1812–1844, when the school was removed to the well-known building on Bedford Street, in which the two high schools, the English and Latin, found a home. For many years, this building served well the purposes for which it was erected. That part of it which was used for the Latin School originally consisted of four large rooms, two small rooms, and a capacious hall. So popular became the school, that the number of pupils increased to such an extent that it became necessary to finish off a room in the basement for the use of a part of the school in 1858, and not long afterwards to hire rooms out of the building, for the needs of the school. In the report of the committee for 1860–61, the opinion is expressed that "the whole building on Bedford Street should be appropriated to the uses of the Latin School, or else a new school-house should be erected on the modern and improved plan, and with the present style of appointments, for its special use." This conviction of the need of change did not grow weaker with the passage of time. The language of the committee for 1874–75 is unmistakably outspoken: "The Latin School has a dirty, unattractive, inconvenient school-house, situated in a part of the city ill adapted to the wants of the school. It is far too scantily furnished with means of illustration, with maps, models, cabinets, or a library. It should be one of the first cares of the School Board to secure for this school a thoroughly desirable site, to erect for it an attractive and commodious building, and to supply it with ample means of illustrating its teaching. Were this accomplished, the instant growth of the school in public favor, and its increase in usefulness, would amaze even its warmest friends and well-wishers." At length the long-cherished wish of the friends of the school has been realized; and the new edifice, on Dartmouth Street and Warren Avenue, erected for the use of the two high schools, is now occupied by them. Commenced in 1877, it was completed in November, 1880, and is said to be "the largest structure in America devoted to educational

purposes, and the largest in the world as a free public school." The limits of this article forbid us to give a minute description of this truly elegant building. Some idea of its size may be formed if one bears in mind that in its present dimensions it is three hundred and thirty-nine feet long and two hundred and twenty feet wide, and that it is three stories high with a basement. There are fifty-six rooms all fronting on the streets, each room accommodating thirty-five scholars. Each school has a large exhibition hall sixty-two by eighty-two feet and twenty-five feet high. There is also a "drill-hall" one hundred and thirty feet long by sixty wide and thirty feet high. There is also a gymnasium for the pupils of both schools. It would seem that with such fine appointments as the high schools now have, they have secured a "local habitation" that will hardly need to be disturbed for many decades of years to come. A comparison between the humble, unpretentious building which once stood hard by the easterly end of King's Chapel, and the present magnificent structure to which we have been referring, will show what immense strides Boston has taken during the nearly two and a half centuries since "our brother, Philemon Purmort, was entreated to become schulemaster for the teaching and nourtering of children among us." The goodly city will be false to all her traditions, and unmindful of the vast benefits which her children have received and are receiving from her unrivalled system of common-school education, if she does not set apart April 13, 1885, as a grand holiday to commemorate the two hundred and fiftieth anniversary of the beginning of the life of her first free school.

REV. JAMES MANNING, D. D.

BY REV. J. C. STOCKBRIDGE, D. D.

THE Rev. James Manning, D. D., the first president of Brown University, was born in Elizabethtown, N. J., Oct. 22, 1738, and passed his early youth on his father's farm. Like so many other presidents of American colleges, he knew the hard yet wholesome experiences of a life devoted to agricultural pursuits. He began his preparation for college at the age of eighteen, in an academy at Hopewell, N. J., under the tuition of Rev. Isaac Eaton, and was a graduate of the College of New Jersey, now Princeton College, in the class of 1762. Among his instructors was the eloquent Samuel Davies, one of the most eminent divines of his day. In a venerable bureau, in the librarian's room in the Brown University library, once the property of Manning, are deposited sundry valuable papers, and among them a manuscript volume, on the fly-leaf of which is written, "James Manning's book, for answers and orations [*i. e.*, questions]. Nassau Hall, July 12, 1762." This volume contains notes on theological subjects, and the handwriting is of that clear and beautiful character which marks all the written productions of its author. That he was fond of investigations in the exegesis of the Scriptures appears from the record of the conclusion to which he came after his examination of the passage recorded in 1 Cor. xi. 10: "For this cause ought a woman to have power over her head, because of the angels." After endeavoring to the best of his ability to unravel the mystery of these words, he says, "But I conclude with the words of Mr. Locke on this passage, 'What the distinct and exact meaning of these words is, I confess I do not understand.'" In the same volume is the Latin Salutatory which he delivered at his graduation, Sept. 29, 1762.

Soon after his graduation he received a license to preach, and was ordained April 11, 1763. For about a year he travelled somewhat extensively through the colonies for the purpose of gaining information that might be useful to him in his ministerial vocation, and to form the acquaintance of Baptist clergymen in different parts of the country. His object was to ascertain how far the project for establishing a college, whose special design should be the education of young men looking forward to the Baptist ministry, was feasible. The leading men in the Philadelphia Baptist Association took a deep interest in the plan; and at the annual meeting of that body in 1762,

held but a few weeks after the graduation of Manning, it was decided "that it was practicable and expedient to erect a college in the colony of Rhode Island, under the chief direction of the Baptists, in which education might be promoted, and superior learning obtained, free from any sectarian tests." It was in furtherance of the purpose thus announced, that Manning came to Rhode Island in July, 1763. There was everything about his personal appearance and bearing that was winning and attractive. "His person," we are told, "was graceful, and his countenance handsome and remarkably expressive of sensibility, dignity, and cheerfulness. He possessed a voice of extraordinary compass and harmony, to which, in no small degree, may be ascribed the vivid impression which he made upon other minds. In his manners, which seemed to be the natural expression of dignity and grace, he combined ease without negligence, and politeness without affectation." At once, this young Christian gentleman and scholar received a cordial welcome from the leading Baptists of Newport, some of whom were persons of distinction in the colony. Fifteen gentlemen met at the house of Deputy-Governor Gardner, and it was decided to commence the enterprise. The Hon. Josias Lyndon and Col. Job Bennet were appointed to draw up a charter, to be laid before the next General Assembly, by them to be passed into a law. To assist them in making this draft, the services of Rev. — afterwards Dr. — Ezra Stiles, pastor of one of the Congregational churches in Newport, were invoked, and he was requested, as being more conversant with such matters, to draw up the desired charter. This is not the place to dwell, in detail, upon the course that was pursued by Mr. Stiles in preparing the draft referred to. It must suffice to say, that he already had a plan of his own with reference to the establishment of a college in the colony, and as a Presbyterian he was not particularly pleased that a charter should be secured which should give the Baptists the pre-eminence in the management of the proposed seat of learning. The charter was so drawn up by Mr. Stiles that the governing power was placed in the hands of eight Presbyterians, usually called Congregationalists, this number being two thirds of the Board of Fellows. Gov. Jenks detected the design of Mr. Stiles, exposed it to the General Assembly, and in due time that body granted the charter, which for more than a century has stood as it now is. That charter, while requiring that the president and a majority of the corporation shall be Baptists, grants important privileges to three other Christian bodies, — the Episcopalians, Congregationalists, and Friends.

The first meeting of the corporation of Rhode Island College was

held on the first Wednesday in September, 1764. Upon what a liberal and catholic basis the new institution was to be conducted, appears from the following provisions of the charter: —

"And furthermore, it is hereby enacted and declared, That into this liberal and catholic institution shall never be admitted any religious tests: But, on the contrary, all the members hereof shall forever enjoy full, free, absolute, and uninterrupted liberty of conscience: And that the places of professors, tutors, and all other officers, the president alone excepted, shall be free and open for all denominations of Protestants: And that youth of all religious denominations shall and may be freely admitted to the equal advantages, emoluments, and honors of the college or university; And shall receive a like fair, generous, and equal treatment, during their residence therein, they conducting themselves peaceably, and conforming to the laws and statutes thereof. And that the public teaching shall, in general, respect the sciences; And that the sectarian differences of opinions shall not make any part of the public and classical instruction: Although all religious controversies may be studied freely, examined and explained by the president, professors, and tutors, in a personal, separate, and distinct manner, to the youth of any or each denomination: And above all, a constant regard be paid to, and effectual care taken of the morals of the college."

Mr. Manning, during the spring previous to the meeting of the corporation of the college, had removed to Warren, R. I., where he had opened a Latin school, proposing to make it a preparatory school for the new college when it should go into operation. In this pleasant village, a church was constituted of fifty-eight members, Nov. 15, 1764, of which he was chosen the pastor. The corporation of the college, at its second meeting, held at Newport the first Wednesday in September, 1765, formally appointed Manning "president of the college, professor of languages, and other branches of learning, with full power to act in those capacities at Warren, or elsewhere." The first commencement of the college was held in Warren, Sept. 7, 1769, at which time, seven were graduated. A glowing account of the important event may be found in "The Providence Gazette and County Journal," issued soon after the auspicious occasion.

Cheered and encouraged as the youthful president was by what had taken place, it must be confessed that for the college it was "the day of small things." It had no buildings and no funds, and not many wealthy friends, and some ill-wishers, who would have shed no tears of sorrow over its failure. The question of erecting a college building for dormitory and other purposes was discussed; but before

this could be settled, the other more important question of final and permanent location had to be decided. Already the prospect of ultimate success became so certain, that there was now an earnest struggle on the part of some of the leading towns of the colony to secure for themselves this location. Of course, Warren wanted the college to remain where its life had commenced. East Greenwich, Newport, and Providence all sought to have the new institution located in their midst. Providence was finally decided upon. President Manning resigned his pastorate of the church in Warren, April 26, 1770, and in a few days removed with his pupils and undergraduates to what has ever since been the home of the college. The building now known as "University Hall" was erected in 1770. The Baptists of America and England, and the friends of good learning in both countries, were appealed to by President Manning and the authorized agents of the college; and if all the funds desired were not raised at once, enough was secured to place the institution upon a reasonably good pecuniary foundation. Added to all his other labors, the president now took upon himself the pastoral care of the First Baptist Church in Providence, performing the duties of the sacred office with rare fidelity and signal success until within a short period before his death.

We come now to the time when the labors and sacrifices of the president in behalf of the college were threatened to have been ineffectual, for a period the duration of which no one could predict. The British took possession of Newport, Dec. 7, 1776, and Providence was thrown into such a state of excitement that it was deemed best to suspend college exercises. Until May 27, 1782, not far from five years and a half, the college edifice was occupied for barracks a part of the time, and afterwards as a hospital for the French and American forces. During this period, President Manning was variously employed. As a pastor, he continued to discharge his duties in a time when the general distress made great drafts on his warmest sympathies. In 1779, he took a journey — an important affair in those days — to Philadelphia, preaching as often as he had an opportunity, both going and returning. He was thus occupied for five months. For a short time in 1780 he attempted to carry on the college, but the attempt did not succeed, and it was not until May, 1782, that the course of study was resumed; but there was no regular commencement until the year 1786. In 1785, the University of Pennsylvania conferred upon President Manning the honorary degree of Doctor of Divinity. He was also honored in other ways. At the March, 1786, session of the Rhode Island General Assembly, he was chosen to represent the State in the Congress of the Confedera-

tion. With the hope that he might obtain some reparation for the injury done to the college edifice during the war, as well as to serve the State, he accepted the appointment. The Hon. Asher Robbins alludes to one incident which occurred while Dr. Manning was attending the sessions of Congress in New York. "I recollect," he says, "his speaking of one debate in which he participated (the subject I have forgotten), on account of a personal controversy to which it gave rise, between him and a fiery young man, a delegate from Georgia, by the name, as I think, of Houston. This young man in his speech had reflected upon New England and her people. Mr. Manning repelled the attack, and by way of offset, drew a picture of Georgia and her people. This so nettled the young man that in his passion he threatened personal violence. The next day he appeared in Congress with a sword by his side. This produced at once a sensation in that body, the symptoms of which were so alarming that he thought proper to withdraw, take off his sword, and send it home by his servant. In the course of the day he took an opportunity to meet with Mr. Manning, and to make him a handsome apology."

In November, 1786, he again resumed his college duties. The interest which had been awakened in his mind in public affairs he did not lose. It is believed that, in no small degree, it was due to his wise counsels and superior influence that Rhode Island, the last of the thirteen original States to take this step, adopted the federal Constitution. The last commencement at which he presided was that of 1790, at which time the largest number that had ever graduated, twenty-two, took the degree of Bachelor of Arts. On the last Sabbath in April, 1791, he preached his farewell sermon as pastor of the First Baptist Church in Providence, having been in office twenty years. Sunday morning, July 24, while conducting family worship, he was seized with a fit of apoplexy. He remained in an almost totally unconscious state till the ensuing Friday, July 29, when he died at about four o'clock in the morning, in the fifty-fourth year of his age.

THE PURPOSES OF EDUCATIONAL ASSOCIATIONS.

THE Department of Superintendence of the National Educational Association held its annual conference, Feb. 8–10, in the city of New York. Although not large, the meeting was attended by some of the most distinguished educators in the United States. The press has handled the proceedings of the session with a tinge of severity. These criticisms, the value of the transactions of the convention, and the power which resides in the body itself, prompt a brief inquiry into the purposes of educational meetings in general. As preliminary to this research, it may be pointed out that the various conventions which exist within the circle of social and civil life in America can be considered under five classes: (1.) Legislative and other business organizations are those which have specific tasks set for them to perform. The participants in the deliberations are members of the body, and therefore are peers in the privileges of discussion; the public are generally absent from the sittings. (2.) The second class consists of those organizations which purpose to impart instruction to those who are present as members. Schools, institutes, and all other meetings which have kindred aims belong to this class; the participants in the exercises are not of equal rank in their privileges of action, because they are the instructed and the instructors; the public, if present, are spectators, and form no elementary portion of the gathering. (3.) The third class includes all those gatherings, as theatres, operas, and lectures, which purpose to entertain and amuse the public, who constitute a vital part of the meetings, although only as spectators. The participants in the exhibitions, being the entertainers and the amused, are not peers. (4.) The fourth class embraces those meetings that aim to convert the public to certain tenets, with the avowed purpose of persuading them to adopt corresponding forms of practice; the public are an integral portion of these gatherings. The participants in the meetings are not equals in privileges, being the exhorters and the entreated. This class is composed of political meetings, religious assemblies, lectures, and all other companies which set forth and advocate matters of belief and practice. (5.) The fifth class of associations contains those assemblages which purpose to enlarge the amount of subject-matter that lies within the limits of the investigations instituted and carried forward by the members of the association. This class comprehends bar associations, medical societies, theological conferences, meetings to advance science, and all other congresses and convocations which purpose to promote the knowledge of the fraternity and forward their profession. The public, if present at the councils of this class, contribute no portion of the meeting, being merely spectators. The participants in the transactions are members of the convocation, and therefore peers.

Educational associations belong theoretically to the fifth class of conventions, although a review of their transactions presents them generally

under the guise of classes 2, 3, and 4. Classes 1 and 5 preserve those facts which are the elementary materials of the business or profession of the fraternity: these materials, patiently compiled and analyzed, furnish the grounds for definitions and inferences which are the classifications and the truths of the science represented by the body; these classes, truths, and theories constitute the profession itself. Law associations, medical fraternities, theological councils, and special science conventions have vocabularies of definitions which express the primary conceptions of the systems of subject-matters that are in the custody of the conventions; they have established modes of procedure in their methods of treating subjects belonging to their professions; their deliberations conform rigidly to these standards of treatment; by these forms of transacting business they increase notably the subject-matter of their professions at each sitting. How far do these remarks represent the matter, modes, and methods of educational associations in the United States? Have educators in America evinced the patience, the perseverance, and the industry which are required to collate the essential facts of the history of education in the States and elsewhere, to discern the tendency of history, to evolve definitions, classifications, and theories, and to set a comely profession before the fraternity? Does this ideal control the efforts of the body to establish and confirm the profession? With whom lie the shortcomings, except with the members of the brotherhood? Hindering influences are so natural to the state of teaching, that the answer to these questions should be explanatory of conditions. Between instructing classes and compiling reports, teachers are overworked in their daily round of duties, and too tired to pursue difficult investigations after school-hours; their autocratic modes of administering the affairs of the school-room induce habits of imperialism in their thought, of which they are unconscious; the average professional life of teachers in the United States is from three to five years. These teachers convene to deliberate upon matters pertaining to their profession. Is it surprising that the proceedings of this body confirm and illuminate the theory that "history repeats itself"? Teachers possessing experience, a warm nature, a cordial desire to assist their struggling brothers, and opinions which are not trammelled by skeletons of professional system and science, may unconsciously earn the title Knight-of-Bore, unless "Love's counsellor should fill the bores of hearing." Especially is this title earned when the brothers care more to know the cunning of a few doubtful devices and expedients for teaching than they do to lay hold upon the fundamental elements of the science of pedagogy. These observations point to the true aims of educational associations. The energies of teachers are most efficiently put forth when they are guided by rules of science. "Union is strength." Educational conferences can purpose no clearer good to their generation and to posterity than to unite their educated forces with the power which inheres in system and profound knowledge; this purpose contemplates a union that will people the land with men and women who are learned in theories of pedagogy, and expert

in effectual modes of practice. A man who is invested in the *toga virilis* of his profession is endued with that plenary inspiration which is enthusiasm, the ancient conception of the spiritual effects made upon man by the action of the forms and forces of nature; a deep knowledge of these forms and forces constitutes human science. Light is conveyed into dark interiors of mountains by tunnels drilled by machines which are constructed, run, and directed, not by workmen exhorting one another to know more of their handicraft only, or to show greater zeal in their "chosen profession," but by engineers whose practical exertions are professional science in motion.

EDUCATIONAL PROBLEMS INVOLVED IN SOCIALISM.

RUSSIAN history, during the period covered by the reign of Alexander II., presents to the student of social science and to the statesman some of the gravest problems that have come to the front in many years. To-day Russian society and institutions are honeycombed with mines dug by teeming Nihilism, and filled with stalking men and women who thirst for the blood of the rulers. Alexander II. was hardly enshrouded in state before policemen found beneath the apartments of Alexander III. an underground passage filled with infernal enginery. Nihilism came to the surface in London in a nefarious menace against the residence of the Lord Mayor. The police of New York arrested men who were posting up notices calling a meeting to express congratulations at the death of the Czar. Communism, otherwise termed Nihilism or socialism, is gradually sapping and mining the social and governmental institutions of the great nations of the earth. Recent events associated with these organizations impress the educator with a force which is calculated to paralyze effort and almost destroy hope. What is the cause of this state of society, and what is the remedy for the malady? Education is held out as the universal panacea for the ills of government; but in Russia, the students of the universities and some of the educated nobility have been notorious instigators and leaders in these plots of destruction. Moralists say that principles of virtue must be taught to youth, and it is to be presumed that these university students received such instruction. The policy of the minister of education in Russia "has been to discontinue the study of natural science as the source of mutiny and insubordination, and encourage that of the classics as favorable to discipline and authority and to the state of religion." In this same line of observation, it may be stated that "The classics, which in England are the means of refining the taste, have in France subserved the spread of revolutionary and deistical doctrines." These effects, produced by those studies as a cause, are indices which point to a deeper and more subtle relationship between subject-matter and mind than metaphysicians have yet apprehended.

School-men advocate the benefits of classical, mathematical, scientific, or mental studies, because of the silent influences which they exert to mould man into a symmetrical character; peculiar modes of teaching are urged for the school-room on the grounds that they germinate and confirm desirable habits of thinking and of acting in the scholar; and certain branches of study are set forward for insertion into curricula of schools upon the score that they are of greatest value to the state. But there are provinces of historical and psychical research lying quite beyond these limits. The purposes of this writing will be sufficiently met by waiving a discussion of the doctrine of *Ding-an-sich*, Things-in-Themselves, or Mind-stuffs, and by proceeding as follows: Matter is invested with apprehensible qualities, and intelligence is endowed with the function of apprehension; when matter and intelligence meet in consciousness, the offspring of the union — that product which springs off from the matter objectively, or that which springs up subjectively and intuitively in consciousness, when the subject-matter is seized by intelligence — is, in general, knowledge. Relating to knowledge, the educational philosopher has before him the following departments of physics and metaphysics to investigate; namely, (1.) He needs to know the inhering and original forces of the apprehensible qualities of subject-matter, that produce organoleptic impressions upon mind. (2.) He needs to be familiar with the power of those impressions to influence the bias in character. (3.) He needs to be acquainted with mind as it is conceived to exist at the date when it emerges from its pre-natal stage of life, endowed with those inheritances which the deft hand of Nature selected to implant in the soul, while she was fashioning the physical form in its marvellous beauty to serve as its transitory home. Of this incipient life, he needs to know its heirship of innate appetencies, of tendencies to perpetuate parental habits, of native capacities to educate itself, and of the assorted stock of germs which are to enucleate into preponderating mental forces of bent, of bias, of inclination, of cast, and of propensity, which long lines of ancestral generations have devised to it through the father and mother of the child. (4.) He needs to know the condition of the mind of youth with regard to its intellectual attainments and prior conceptions, at the time when it begins the studies which are set for it to learn. (5.) He needs to understand the art of reconstructing the furnishings of mind, and of changing the location of its bias and rendering it stable. When these provinces are explored, educators will be able to deal *a priori* with the great problems of Nihilism, as well as with national life universally.

EDUCATION IN THE SOUTH.

THE election, by the Trustees of the Peabody Fund, of Dr. Curry, of Richmond, to the general agency of that fund, is a disappointment to some, a surprise to many, but we trust in the end it will prove a blessing to all. Dr.

Sears's long administration of the trust had been abundantly wise, careful, and far-seeing. His policy had been to encourage local efforts in the Southern communities through the aid which the fund furnished, giving only as far and as fast as it developed a spirit and a strength for self-dependence. Later on he had diverted the proceeds of the fund from the work of establishing schools to that of providing skilled normal teachers for instructing in the common schools of the South. His plans and successfully begun work in this direction were suddenly terminated by his death, and it has been a source of anxiety for several months as to the person, the character, and the policy of his successor. The South had many good men, notably among them Dr. Ruffner, of Virginia, Dr. Orr, of Georgia, Dr. Newell, of Maryland, and others; but, in the opinion of many even of the South, the Southern educational outlook was not broad enough, nor its statesmanship high enough, to comprehend the situation, and to distribute the Peabody gift with equal hand among the States, and the varied classes of those States, in proportion to their needs. On the other hand, the difficulties which might beset a Northern man, illustrated in the early experience of Dr. Sears as general agent, seemed a barrier against the appointment of any of our Northern educators to this very important trust. Prominently among those who were held in high esteem at the North as abundantly fitted for this position were General Eaton, Chief of the Department of Education at Washington; Dr. Philbrick, the eminent educator of New England; President White; Hon. Mr. Smart, of Indiana; Dr. Bateman, of Illinois; and President Pickard, of Iowa.

At the meeting of the Trustees, at Washington, more than twenty names were before them, not, however, as personal candidates, for there is no body in America so peculiarly a law unto itself as this Board of Trustees, and to none is a larger range of unsolicited choice conceded. In the balancing of the needs of the South, the varied interests to be met and satisfied, the selection seemed finally to be a surprise to the Trustees and to the country, and probably a great surprise to the person chosen. Dr. Curry, of Richmond, Va., the new agent, has had a somewhat varied career, — now as teacher, editor, and member of the lower house of the National Congress, then a member of the Confederate Congress, a soldier and officer in the Southern army, and finally a Baptist clergyman, and professor in Richmond University, from whence he enters on his new and exceedingly responsible duties. Dr. Curry knows the field, the spirit of the people, the relations and needs of the two races to be educated, enjoys the confidence of those among whom he is called to labor, and goes to his work with the best wishes of the country to sustain him. The Trustees have wisely given him a *carte blanche* as to methods and the distribution of funds, only indicating the general purposes to be secured. It remains to be seen whether Dr. Curry has breadth of view that will lead him to see that the elevation of both races at the South is essential to the success of all, and that the highest statesmanship is involved in the wise administration of this magnificent trust. The remarkable

development of interest in public education in several of the Southern States is an omen of the great advances which the South is to make in the next decade or two in intellectual prosperity, which, coupled with an amazing advance in wealth, will render that section the peer of the more favored States in a generation.

OUR SCHOOL SYSTEM INCOMPLETE.

FREE schools, offering the advantages of good instruction to all children and youth, regardless of race, color, or religious belief, is one of the grandest ideals ever set before the world; but its practical advantages can never be reaped from sentiment, but must come from profound wisdom judiciously applied. The educational system is an immense institution; having, in a single State like Massachusetts, more than three hundred thousand children in the public schools, under ten thousand teachers. When we consider the multitude of children, the delicacy of the human mind, the infinite variety of shade and hue in the disposition, the wide range of home influence and want of influence, the difficulty of securing ten thousand teachers qualified for such work, it is not to be wondered at that these are weak points at which brilliant essayists can plant themselves to illuminate magazine literature with their pyrotechnical display of the art of criticism. Our free-school system is not perfect; its champions do not claim that it is: they only claim that the ground has been cleared for the upbuilding of a perfect educational system; and its opponents make an ungenerous mistake when they treat it as a complete system, and its friends are injudicious when they resent all criticisms as though the system was too sacred to be touched with the critic's pen. Objectively the school work is wellnigh perfect, subjectively it has but begun. So far as the incorporation of scientific methods of teaching into the life of the average school is concerned, little or nothing has yet been attempted. Without underestimating what is being done, we do not hesitate to affirm that the work done through normal schools, teachers' institutes, and educational journals has not fruited in large results, because the public sentiment has not permitted the change of methods requisite to change results. The committees and parents demand that the children of to-day be taught as they were, forgetting that the grading of schools necessitates the thorough teaching of each child in all the details of each branch.

When the men of to-day were children, the scholars who could not learn arithmetic slighted it, while they pushed ahead in something else that they liked. Scarce any two scholars were together in all branches, and not a few omitted grammar altogether. The test of scholarship was the deceptive examination day when he was brought out in the subject in which he showed to the best advantage. Now these men are on the school committee, and they think it strange that the whole school is not as brilliant as he was in his specialty. He forgets that the child of to-day is not allowed to omit any

subject, to slight any study, but must take half as many more new branches, must move forward evenly in all of them, and must be subjected to rigid monthly examinations to make sure that he be found wanting in no regard at the end of the course. The requirements of to-day are infinitely above those of the past. This addition of fifty per cent more work to every grade of schools must, of necessity, dilute the quality of the knowledge gained, unless there be introduced better methods, by which fifty per cent more can be learned in the same time. In this regard our system is incomplete. To these better methods of teaching the attention of the pedagogical world is now turning its thought; and when there shall have been as great advance in this as in other matters, our schools will be in reality what they now are in idea, the crowning glory of America.

MISCELLANEOUS NOTES.

HON. J. P. WICKERSHAM has retired from the office of State Superintendent of Public Instruction of Pennsylvania, which position he has held continuously for the past fifteen or sixteen years. Mr. Wickersham is one of the most enlightened and progressive educators in the United States; his administration has been distinguished by those abilities and by that devotion which so eminently characterize the man. The school system of Pennsylvania has reached a high degree of efficiency under his fostering labors.

WHILE moral-suasionists are advocating the abolition of the rod from the school-room, State Legislatures are urged to pass laws authorizing the flogging of men who beat their wives or who strike a woman. These measures have been brought lately to the attention of law-makers in the States of Pennsylvania and New York. In the latter State that acknowledged philanthropist, Mr. Henry Bergh, of New York City, president of the Society for the Prevention of Cruelty to Animals, has advocated this mode of punishment for this class of criminals. It is quite unlikely that either State will adopt the remedies proposed; but it is very suggestive to educators that the enlightened public, who deal practically with humanity as it exists in the by-ways of the earth, entertain deep convictions that a human being instinctively indicates the sort of punishment which he is prepared to appreciate, by the manner in which he commits overt acts against society, and by the kind of crime which he perpetrates.

ALEXANDER II., Czar of all the Russias, died March 13, in the Winter Palace at St. Petersburg. He was assassinated while returning from inspecting the parade in the Michel Manege. This event has drawn out expressions of sympathy from all governments in the civilized world, our own having been among the foremost in this mission of sorrow. Alexander was

a firm friend of the United States in those dark days which followed 1861; his was the first despatch of condolence that reached Washington from foreign governments when President Lincoln was assassinated; his men-of-war were stationed in the harbors of San Francisco and New York, sent there under sealed orders to be opened only upon certain contingencies, — that a hostile fleet should sail from European ports against the North, as secret rumors hinted possible at one time. In these precautions he acted the friend who anticipates attack upon his colleague and parries the blow. He was a benefactor to his empire and to humanity, having proclaimed liberty to over twenty-three millions of his subjects, in the years 1861 and 1864. These official acts were followed by troubles which led to his violent death.

THE relation which the public-school system of a State should sustain towards the political parties of the State is undergoing an examination in the State of New York, where the normal schools belong to the system of public schools. The State Superintendent of Public Instruction has caused to be introduced into the Legislature a bill which proposes to remove the management of the normal schools of the State from boards of education, that have heretofore successfully conducted them under his general supervision, and place them in his own hands. The boards comprise over seventy representative citizens of the State; the bill practically proposes to abolish these boards. The several faculties of the normal schools aggregate over one hundred prominent teachers, many of them celebrated over the United States for their professional attainments and labors; the bill contemplates putting the tenure of position of all these teachers at the mere pleasure of the superintendent, which is but another mode of saying at the disposal of the dominant political party of the State, as the Legislature elects the superintendent. This is, perhaps, the first instance in the history of the public schools in the United States where the attempt has been made openly to subvert the school system of a State to the position of supplying the dominant party in politics with the influences which exist in patronage. It is creditable to the State that all parties and creeds unite in denouncing the measure as being opposed alike to expediency and to the genius of American institutions.

ENGINEERING science in the United States has won new honors at the hands of Lieutenant-Commander Gorringe, of the United States Navy, who has recently completed the transfer of the obelisk from its site in Alexandria, Egypt, to its site in Central Park, New York City. The following synopsis, taken from his own account of the enterprise, will be found interesting, and will show the magnitude of the undertaking as compared to those of Rome, France, and England, when they removed their obelisks: —

The moving of obelisks is not a novel undertaking even in modern times, for one larger and one smaller than ours have been successfully removed

from Egypt to Europe in this century; but there was one novel feature involved in my work. From Egypt to the mouth of the Tiber, Thames, and Seine it is not necessary to lose sight of land, and safe harbors are available at short intervals; but in a voyage from Europe to America, there is one stretch of nearly 3,000 miles where rough seas are invariably encountered in every season. The vessels used for transporting the Roman, French, and English obelisks were all constructed in Europe especially for the purpose. The Roman was an immense open boat, propelled by three hundred rowers. The French vessel was constructed so that the bow could be removed in one piece. The English craft was an iron cylinder, pointed at the ends, it was shipped in sections to Alexandria and put together around the obelisk. The last two had no motive-power; they had to be towed wherever they went. There is no record of the time consumed in the voyage of the Roman obelisk from Egypt to the mouth of the Tiber; it took five and one half months for the French to reach Havre from Alexandria, after traversing a distance of 3,600 miles, and touching at every port on the way and never venturing out to sea during a storm. The English monolith was four months on the voyage from Alexandria to the Thames, a distance of 3,000 miles; but of this, three months were spent at Ferrol, where it had been towed after its recovery at sea. It took us thirty-eight days to make the voyage from Alexandria to New York, a distance of 5,350 miles. Two curious propositions were made to me in this country: one to bring the shaft over on the deck of a sailing vessel of four hundred tons, the other that I should sling it under her keel. The idea of putting it inside of the hold, and stowing it as you would any other article, appeared to amuse every ship-owner that I applied to for a vessel, and I was obliged finally to purchase a steamer, after six months of fruitless effort to charter one.

The weight of the heaviest Roman obelisk is about three hundred and fifty tons, that of the French is three hundred and twelve tons, the English one hundred and seventy-nine tons, and ours two hundred and nineteen tons.

There has been some question as to who designed the apparatus I used for turning the shaft, doubtless owing to the fact that I am only a naval officer and not an engineer. I anticipated this, and made a rough sketch and memoranda on the day I decided on my plan. This original sketch, with date and signatures of witnesses, is now in my possession. I gave a copy of it to Mr. Charles Roebling, a name familiar to this society and deservedly eminent in engineering annals, who developed the plan, determined the strains, and with his own hands made a working drawing of it. He then took the contract for its construction and sublet it to the Phœnix Iron Works of Trenton, where it was executed so admirably that every piece fitted to its place without the slightest trouble or need of adjustment after it reached Alexandria.

The work of the removal of the French obelisk is the only parallel with that involved in the removal of ours. It occupied the French engineer

nearly six years, and cost the French government nearly half a million of dollars to complete this work. The total time taken for the removal of our obelisk, from the time we began the work in Alexandria until it was finally erected in the Park, was one year and four months, and the cost was $105.000.

It should be recorded that this expense was met by one gentleman, Mr. William H. Vanderbilt, of New York, the great railroad magnate of the United States.

REPORTS.

ARCHÆOLOGY.

As archæologists are aware, recent excavations have brought to light, on the Aventine and Esquiline, portions of the great ring wall by which Servius Tullius enclosed the hills of Rome. The wall is computed to have been about seven miles in circumference. Among the recent discoveries are pieces of this wall found at the angle of the Via Montebello and Via Volturno. In the wall built by Servius Tullius, iron clamps have been found similar to those still to be seen in several places in the Colosseum where pieces of the facing of the stone have been split off. It may be interesting to recapitulate the different materials used in the buildings at Rome; for the different historical periods of building have been classified, the dates of erection being determined by observing the material used and the manner in which the edifice is constructed. Without speaking of the early Greek and Etruscan periods, the stones used in building in the time of the kings were square and were of tufa (*lapis ruber*). In the earliest walls they are jointed; later the edges were bevelled. In the walls of *Roma Quadrata* no clamps have been found. During the time of the Republic the stones were square, but were of peperino. Pieces of stone fixed together by cement, formed into a wall, were called *opus incertum;* later this style was improved upon by facing the outside of the small pieces of stone and making them of uniform size. When the stones were cut into wedge shapes, the points being turned inward and being laid in regular rows, the work was called *opus reticulatum*. This style was in fashion during the last years of the Republic, but after the time of Tiberius it was discontinued until revived by Hadrian, who, in order to distinguish his work from that of his predecessors, set his reticulated work in bands of brick like a picture-frame, the inside of the walls being concrete. The earliest brick building was the Pantheon, Augustus being the first to use brick. His boast that he found Rome of brick and left it of marble is only true in the sense that he veneered marble on to the brick-work. One way of distinguishing Roman brick-work of different periods is to measure the number of bricks in a foot. In the brick-work of Nero, thin, narrow bricks with very little mortar were used; the character of the work gradually declined until the cement was as thick as the bricks.

The bricks were of two colors, red and yellow. The walls were not of solid bricks all through, but the interior was made of pieces (rubble work), the outside course being of whole bricks; at every four or five feet great tie-bricks, stamped with the names of the consul or emperor and maker, were laid to keep the rubble-work from shaking. This style was the *opus lateritium*. The date of the walls is determined by measuring the number of bricks to a foot. In the fourth century another system came into vogue, the walls being built with layers of brick and pieces of tufa stone. This style continued down to the thirteenth century, when tufa stones without the bricks between them were used (*opera saracenesca*). The stone walls were held together by their weight and by clamps.

Recapitulation.

Tufa of the Time of the Kings.

Style.	Specimens.	Date.
Opus quadratum; first period, square edges	Veii.	
	Gabii.	
	Palatine Hill	B. C. 753
Second period, bevelled edges	Second Wall of Rome	B. C. 746
	Aventine Hill.	
	Ostia.	

Peperino of the Time of the Republic.

Opus quadratum	Tomb of Scipio	B. C. 298
" "	Temple of Hope	B. C. 240
" incertum	Temple of Cybele	B. C. 191
" polygonal	Emporium	B. C. 190
" quadratum	Tabularium	B. C. 78

Travertine and Brick of the Time of the Empire.

Opus quadratum	Tomb of Cecilia Metella	B. C. 50
" "	Theatre of Marcellus	B. C. 13
" "	Arch of Dol	A. D.
" "	Colosseum	A. D. 80
" reticulatum	Muro Morto	B. C. 80
" "	Tomb of Augustus	B. C. 20
" "	House of Tiberius.	
" "	" Germanicus.	
" "	Hadrian's Villa.	

Opus lateritium.

Bricks, 6 to a foot	Pantheon. Augustus.
" 6 "	Prætor. Comp. Tiberius.
" 6 "	Palace of Caligula.
" 8 "	Aqueduct of Nero.
" 7 "	Palace of Domitian.
" 6 "	Temple of Venus and Roma. Hadrian.
" 6 "	Nymphæum on the Palatine. M. Aurelius.

Bricks, 5 to a foot	Baths of Caracalla.	
" 5 "	Nymphæum of A. Severus.	
" 5 "	Walls of Rome. Aurelian.	
" 5 "	Thermæ of Diocletian.	
" 5 "	Basilica of Constantine.	
Bricks and tufa	Circus of Maxentius	A. D. 300
" "	House of Gregory	A. D. 590
Opera Saracenesca	S. Sisto Vecchio	A. D. 1200

The excavations at the Thermæ of Caracalla (Antoninianæ) have been continued, the site of the Stadium being now actively excavated. At the southern end some bath-chambers have been unearthed, and a beautiful black and white mosaic pavement found. One large chamber is shaped like a basilica without aisles. The government intends to clear the vaults and passages under the *Thermæ*, thus rendering this important ruin still more interesting.

In the excavations at Hadrian's Villa a vase has been found six inches below the surface, containing 2,671 Roman silver coins of the time of the Republic and early Empire. A beautiful replica of the Faun of Praxiteles has also been discovered, but unfortunately the head is missing. It is like the Faun in the Capitoline Museum, which was found here. The government is carrying on the excavation of the palace; and these finds, it is to be hoped, will encourage those in charge to prosecute the work energetically.

It has long been a prevalent belief that man employed bronze before iron was known. Professor Huntington, of King's College, London, controverts this view, while admitting that more bronze than iron implements have come down to us from prehistoric times. Professor Huntington shows that the force of that fact is weakened by the very important consideration that iron oxidizes very rapidly, while bronze decays slowly. At a remote period the inhabitants of India were well acquainted with the working of iron, as were the Egyptians. That man in a savage state may have a practical knowledge of the nature and use of iron is proved by the finding of iron assegais, of native workmanship, in Zululand. Professor Huntington adduces enough to show that the hard lines usually drawn to indicate human progress, first from the stone, then to the bronze, and lastly to the iron age, must, to say the least, be relaxed.

The excavations at Ostia, at the southern mouth of the Tiber, are discovering valuable remains. An altar of remarkable beauty has just been unearthed, upon which illustrations of the birth of Romulus and Remus are sculptured in high relief. On one side are the Palatine, and the shepherd Faustulus looking down from the cliff upon the twin boys; on another are Rhea Silvia and the god Mars, with a genius above them, drawing them together; while on the third are Cupids playing with the helmets and the arms of the god. It is in a fine state of preservation, and is regarded as the most important work of art found for a long time at Ostia.

HISTORY AND PHILOLOGY.

In "Hermes," Vol. XIV., Mommsen discusses the Roman guards. The Prætorian cohort was first instituted by the younger Scipio in the Numantine war, and was not, as is often supposed, the work of Augustus. Under the Empire there were nine cohorts of 1,000 men each, whose pay was double that of a common soldier. The city cohorts (*cohortes urbanæ*, divided according to Tacitus into three, or according to Dion Cassius into four cohorts, were instituted by Augustus) formed a separate troop from the Prætorians. Mommsen gives a noteworthy inscription (C. I. L. 81, 2725) recording the career of a soldier who passed from service as a common soldier to the Prætorian guards, and afterward was for twenty-three years one of the *evocati*. These were picked men, who were invited to further service after having completed their *stipendia*. They were probably taken from the Prætorians. They formed a distinct feature of the military organization from the time of Augustus to about the middle of the fourth century A. D., as *architectus ornamentorii imperatoris* under Domitian, Nero, and Trajan.

Havet, in the "Revue de Philologie," Vol. II., has a valuable article on Appius Claudius and Spurius Carvilius. He discusses the regulation of the Latin alphabet made by Carvilius (*c.* B. C. 234), who gave to *g* the place formerly held by *z*. Mommsen has shown that the Latin *g* was not in existence B. C. 450, and that it was about B. C. 250. Havet thinks that the expulsion of *z* and the substitution of *g* for it were simultaneous. Carvilius was born about B. C. 310, and might have been a client of Appius.

SCIENCE.

In a paper read before the Royal Society, Jan. 13, 1881, and published in the "Chemical News," John Tyndall details some interesting experiments upon the effects of heat upon gaseous matter. Having become acquainted with Mr. Graham Bell's experiments, "wherein musical sounds are obtained by the action of an intermittent beam of light upon solid bodies," Mr. Tyndall "entertained the opinion that these singular sounds were caused by rapid changes of temperature producing corresponding changes of shape and volume in the bodies impinged upon by the beam." "But if this be the case," says Mr. Tyndall, "and if vapors and gases really absorb radiant heat, they ought to produce sounds more intense than those obtained from solids." He caused a circular piece of sheet zinc, provided with radial slits, to rotate rapidly across a beam of light from a Siemens lamp, the disk of zinc being placed near the focus of the beam produced by lenses, — afterwards by concave mirrors, which gave better results. The flask containing the gas to be examined was placed just beyond the rotating zinc, and from the flask a tube of India-rubber, provided with an ear-piece of boxwood, led to the ear, thus rendering delicate sounds distinctly audible. Highly absorb-

ent vapors, as of sulphuric ether, formic ether, and acetic ether, produced loud musical tones under the action of the intermittent beam of heat. The vapors of chloroform and bisulphide of carbon, which are very diathermanous, produced very weak sounds, often scarcely audible. Further experiments by Mr. Tyndall proved that liquids will not produce sounds by the action of the intermittent beam. "The pitch of the note is in each case determined by the velocity of rotation." Experiments with air, hydrogen, and oxygen showed that they yield so feeble a note as to be heard with difficulty. With carbonic anhydride the sound was louder; with N_2O it was still louder; while with olefiant gas it seemed as loud as that of an ordinary organ-pipe. Ammonia and aqueous vapor were both found capable of producing these sounds. Thus it will be seen that the strength of the sounds depends upon the degree of athermanous character possessed by the gas or vapor, and these sounds may be made a measure of the absorption of heat by these bodies.

A paper was read by M. Müntz at the Academy of Sciences, Paris, March 7, 1881, on the presence of alcohol in the ground, in water, and in the atmosphere. He has developed the method depending upon the change of alcohol into iodoform, so that one millionth of alcohol in water can be detected. Alcohol is found in all natural waters except very pure spring water; also a greater amount in snow. Rain water and Seine water contain about one grain per cubic metre. Alcohol no doubt also exists as vapor in the air; in soils rich in organic matter there is considerable quantity. The destruction of organic matter by various agents of fermentation accounts for the wide diffusion of alcohol in nature.

In another paper on some phenomena of optics and vision, M. Trève shows that both in vision and photography light is propagated with more intensity through a horizontal than through a vertical slit.

Observations of solar spots, faculæ, and protuberances at the observatory of the Roman College during the last quarter of 1880, by P. Tacchini, show a progressive diminution of the frequency of spots. The maximum of faculæ of September extended into October. The minimum of extension and height of protuberances fell in October, as well as the minimum size of spots. For spots and faculæ the maximum frequency was in the same zones as the previous quarter, viz., $\pm$ 10° $\pm$ 30°. For protuberances, the maximum are not symmetrical. We are still far from the maximum of solar activity.

At the meeting of the Royal Society, Feb. 3, 1881, a paper was presented by John Haycroft, of Edinburgh University, on the cause of the striation of voluntary muscular fibre. Mr. Haycroft shows that all the striæ observed are due to the shape of the fibre, and not to any differences of structure along the fibre. He says that the fibre is ampullated, alternate ridges and depressions occurring regularly across its length. The action of these upon transmitted light causes the striated appearance. The action of staining agents and of polarized light can readily be explained by this means.

Mr. John Aitken read a paper on dust, fogs, and clouds, before the Royal Society of Edinburgh, Dec. 20, 1880, in which he advanced some views differing from those of recent writers on the subject of fogs. His views are supported by many experiments. They were as follows: Two receivers were filled with air, and in the one case care had been taken to pass the air through a cotton-wool filter to remove all dust, while the other receiver was filled with unfiltered air. Upon introducing steam into both receivers, the one containing unfiltered air was immediately filled with a foggy condensation, while the air in the other remained supersaturated and transparent. His experiments were repeated by a different method with similar results. His general conclusions are as follows: (1.) That whenever water vapor condenses in the atmosphere, it always does so upon some solid nucleus; (2) that dust particles in the air form the nuclei on which the vapor condenses; (3) that if there was no dust there would be no fogs, no clouds, no mists, and probably no rain, and that the supersaturated air would convert every object on the surface of the earth into a condenser on which it would deposit; (4) our breath, when it becomes visible on a cold day, and every puff of steam as it escapes into the air, show the impure and dusty condition of our atmosphere. He thinks that "whatever increases the amount of dust in the air tends to increase fogs, and that when the dust particles are not so numerous, the cloud particles are larger and settle down more quickly. . . . If we heat the one hundredth of a grain of iron wire, the dust driven off from it will give a distinct cloudiness in the experimental receiver." Many different substances were found to be active fog producers. "Common salt is perhaps one of the most active." Also, the products of combustion of various substances, as common salt, burned in a fire or alcohol flame, and gas, coal, and sulphur. "Of these, burning sulphur was found to be the most active substance experimented upon. . . . It gave rise to a fog so dense that it was impossible to see through a thickness of 5 c. m. of it." Mr. Aitken further concludes that all forms of combustion, perfect and imperfect, are producers of fog-nuclei, and that more perfect combustion would only have the effect of making fogs purer and whiter, by preventing the smoke which at present mixes with our town fogs and aggravates their character. "Smoke descends during a fog because the smoke particles are good radiators, and soon get cooled and form nuclei on which the water vapor condenses. . . . The smoke thus becomes heavier and falls. . . . This explains why falling smoke is often the sign of coming rain. . . . It indicates a saturated condition of the atmosphere." The two hundred tons of sulphur burned with the coal every winter day, in London, he thinks quite sufficient to account for the density of London fogs. Mr. Aitken communicated further experiments on the formation of fogs, Feb. 7, 1881. Regarding the production of dry fogs, — *i. e.*, fogs that are formed in non-saturated air, — he points out that certain kinds of fog-forming dust are much more efficient than others. Some, in virtue of their deliquescent properties, form clouds in non-saturated air; others only act in saturated air; and a third class require supersaturated air.

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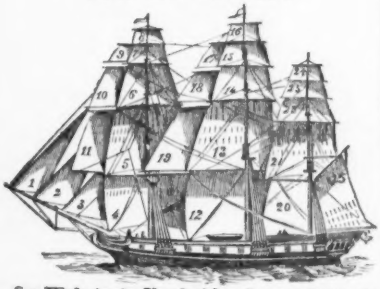

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